Chapter 10

FISCAL POLICY

Essentials of Economics in Context, 1st edition (Goodwin, et al.)

Chapter Overview

This chapter starts out with an overview of the government's budget. It provides a description of taxation specifically in the United States, including data on the structure of various federal taxes, and their impacts. It then presents an analysis of fiscal policy impacts. Formal analysis of fiscal policy is balanced with real-world data and examples. The difference between automatic stabilizers and discretionary policy is made clear, and recent fiscal policies are discussed. The section on budgets and deficits should give students an understanding of deficits, debt, and how these affect the economy. By the end of this chapter, you will have a good understanding of policy issues related to government budget.

Chapter Objectives

After reading and reviewing this chapter, you should be able to:

1. Explain what is meant by tax progressivity.
2. Discuss the structure of the federal income tax in the United States and define recent trends in U.S. tax data.
3. Understand the impact of changes in government spending, taxes, and transfers on aggregate expenditure and output.
4. Carry out calculations using "multipliers."
5. Describe the major types of government outlays, and major government revenue sources.
6. Distinguish between government deficits and government debt.
7. Describe the recent history of U.S. debt and deficits, and the controversies surrounding them.
8. Discuss the relative advantages and disadvantages of automatic and discretionary policies.
9. Understand the main problems with excessive borrowing

Key Terms

fiscal policy
government spending (G)
transfer payments (TR)
government outlays
government bond
progressive tax
regressive tax
proportional tax
taxable income
marginal tax rate
effective tax rate
social insurance taxes
excise tax
estate taxes
gift taxes
budget surplus
budget deficit
balanced budget

disposable income	discretionary fiscal policy
tax multiplier	time lags
balanced budget multiplier	crowding out
net taxes	crowding in
expansionary fiscal policy	gross federal debt
contractionary fiscal policy	debt held by the public
countercyclical policy	deficit ceiling
procyclical policy	debt ceiling
automatic stabilizers	functional finance

Active Review

Fill in the Blank

1. If the government uses tax cuts to expand the economy, it would be using __________ policy.

2. A tax in which the proportion of income paid in taxes tends to rise as one's income increases is known as a ___________________ tax.

3. Total taxes paid divided by income is known as one's _____________________.

4. To determine the impact on a change in lump sum taxes on equilibrium output, one would use the tax multiplier, which equals ________________.

5. If one were to increase government spending by $50 million, and simultaneously raise taxes by $50 million in order to keep the government budget in balance, one would discover that the _______ multiplier is equal to positive one.

6. Government spending on goods and services (such as new bridges and mass transit) and government transfer payments (such as unemployment compensation and food stamps) are two categories of government ___________.

7. The progressive income tax and transfer payments such as unemployment compensation are examples of ______________, because these tax and spending institutions increase government revenues and lower government outlays during an expansion (and decrease government revenues and raise government outlays during a contraction) thereby smoothing out the business cycle.

8. The gross federal debt results from an accumulation of ______________ over the years.

9. The ______________ debt refers to the total amount owed by the federal government to *all* claimants.

True or False

10. Suppose Josh has an income of $50,000 and pays $10,000 in total taxes. Corinne has an income of $30,000 and pays $6,000 in taxes. This is an example of a progressive tax system.

11. For the U.S. federal income tax, one's effective tax rate is generally higher than their marginal tax rate.

12. There is no way to expand an economy using fiscal policy without incurring (or increasing) a budget deficit.

13. With an *mpc* of 0.8, the multiplier for U.S. government spending is equal to a value of 5, and this value is a fairly accurate reflection of the multiplier in the real world.

14. A policy tool that can be used to fight inflation (brought about by excessive aggregate demand) is contractionary fiscal policy.

15. If $T – (G + TR)$ is positive, there is a government budget surplus. If $T – (G + TR)$ is negative, there is a government budget deficit.

16. An accumulation of government debts will ultimately lead to a deficit.

Short Answer

17. Explain the difference between a marginal tax rate and an effective tax rate.

18. What multiplier is used for calculating the change in output resulting from a change in government spending?

19. What are the three expansionary fiscal policy tools the government can use to expand an economy that is in a recession?

20. What are the three ways the government can finance its expenditures?

21. What role does the size of the economy (GDP) have to play in whether or not a government deficit is burdensome to the economy?

22. What role did automatic stabilizers and discretionary fiscal policies have in the emergence of budget surpluses during the late 1990s?

23. Explain the difference between "crowding out" and "crowding in."

24. Explain the difference between deficits and debt, and discuss how they are related.

25. Has the federal debt increased over the past century in absolute terms? How about as a percentage of GDP? Discuss.

Problems

1. Suppose in a simple economy with no foreign sector, the *mpc* equals 0.8. Investment spending has suddenly fallen, reducing aggregate demand and output to a level that is 100 million below Y^*.

   a. If the government decided to try to get the economy back to full employment using only an increase in government spending (ΔG), by how much would G need to be increased?

   b. If the government, instead, decided to try to get the economy back to full employment using only a lump-sum tax cut (ΔT), how big of a tax cut would be needed?

c. Alternatively, if the government decided to try to get the economy back to full employment using only an increase in transfers (ΔTR), how large would this increase need to be?

d. Which fiscal policy--increasing G, decreasing T, or increasing TR--would do the least amount of damage to the government budget deficit?

2. Suppose it was found that the *mpc* varied by income level in the following manner, with lower income households spending a greater portion of every dollar of income than higher income households.

Household income	*mpc*	*Income/spending multiplier*	*Tax multiplier*
0-$30,000	0.9		
$31,000 – 50,000	0.8		
$51,000 – 80,000	0.75		
$80,000 and above	0.6		

a. Calculate the government spending and tax multipliers for each income bracket, considered separately.

b. Suppose the government decided to use tax cuts to expand the economy, and was debating whether to direct tax cuts to high income households or low income households. Which choice would provide a greater stimulus? Thus, which would do the least amount of damage to the government budget deficit to achieve a given amount of stimulus?

(Note: Technically, while tax cuts can, by design of the policy, be targeted so that their initial impact is on the incomes of a particular group, the feedback effects represented by the multiplier probably in general depend on the *economy-wide average* value of the *mpc*. We abstract from this issue in this question.)

3. Assume a simple closed economy, with an *mpc* equal to 0.75. The government has passed a balanced budget amendment. The economy goes into a recession, so the government increases government spending by 40 million to try to expand the economy.

   a. Calculate the change in output (ΔY) from the increase in government spending (ΔG).

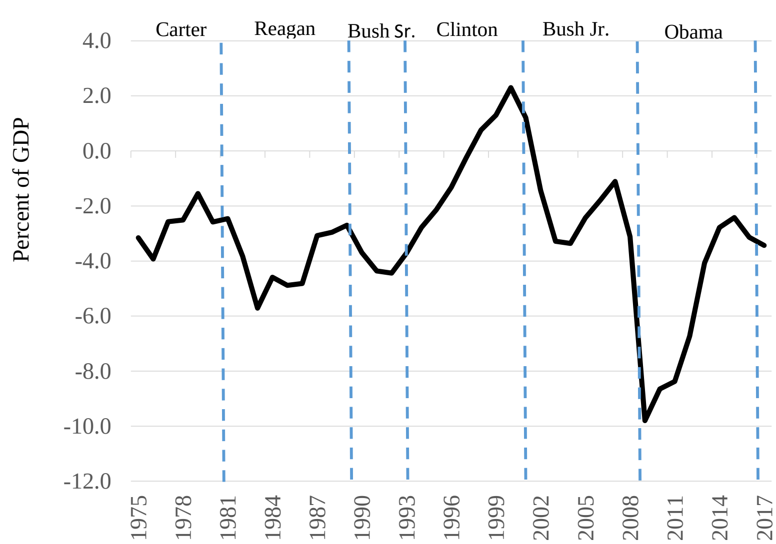
   b. The balanced budget amendment requires the government to also raise taxes by 40 million. Calculate the change in output (ΔY) from the tax hike.

   c. What is the net effect on output from these two policies? Was there any expansionary effect?

   d. Why is a balanced budget amendment problematic or undesirable?

4. Use the Figure below to answer the following questions:

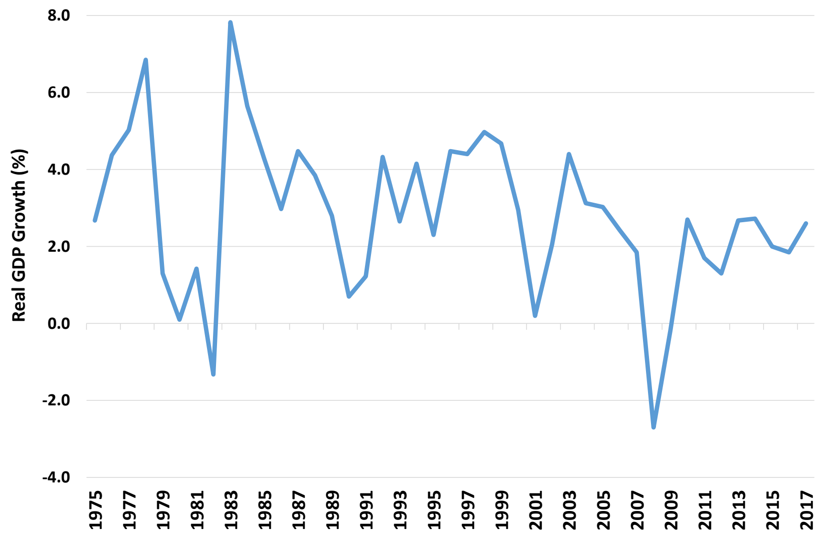
Federal Surplus or Deficit (as Percent of GDP), 1975 - 2017



   a. It is sometimes said that Republicans are the party of "small government," whereas Democrats are the "big spenders" and the party of "big government." Is this confirmed by the historical evidence of the 1975-2017 period?

b. What changes in discretionary Government outlays (*G*, *TR*) and Tax revenues (*T*) might explain the emergence of the huge deficits under Reagan, G. Bush Sr., and G.W. Bush Jr? And what might explain the surpluses under Clinton?

c. Are changes in discretionary fiscal policy sufficient in explaining the emergence of deficits and surpluses? What role do automatic stabilizers play? Consider in your answer the figure of the U.S. real GDP growth rate, below.



d. When Clinton came into office, he increased taxes (the top income bracket was raised somewhat) and cut government spending. These are both considered to be contractionary fiscal policies. And yet the economy boomed. What could explain this? Could the surpluses under his administration come about only from his discretionary fiscal policies?

e. The G.W. Bush Jr. administration increased government spending and passed sizeable tax cuts, primarily benefitting the rich. Critics argue that these tax cuts will only lead to deficits and do little to stimulate the economy. Explain their point of view.

5. Given the following hypothetical budget data for "Budgetland," fill in the "total spending" column (which, for the time being, is just military and civilian spending). Then calculate the surplus/deficit for each year and, based on this calculation, the existing debt at the start of the next year. Comment.

Year	Tax Revenue	Military Spending	Civilian Spending	Total Spending	Surplus or Deficit	Existing Debt
2015	7.0	4.0	4.0			100.0
2016	7.2	4.0	4.1			
2017	7.2	4.2	4.3			
2018	7.3	4.0	4.5			
2019	7.0	3.7	4.7			
2020	7.1	3.5	4.9			
2021	6.8	3.6	5.1			
2022	7.0	3.7	5.3			
2023	7.2	3.8	5.5			
2024	7.3	3.9	5.7			
2025	7.4	4.0	5.9			

6. Now let's compare Budgetland's debt to its GDP. Add two columns—GDP, and "debt-GDP ratio." Let GDP in the year 2015 equal 200.0, and assume that it grows by 3 percent annually. Then calculate the debt-GDP ratio for each year. What trend do you notice?

Self Test

1. Fiscal policy refers to ...

    a. control of the money supply
    b. decisions to alter market interest rates
    c. government spending and taxation decisions
    d. control of the producer price index
    e. none of these

2. A tax which impacts high-income taxpayers more than low-income taxpayers, expressed as a percentage of their income, is known as what kind of tax?

a. A flat tax
b. A regressive tax
c. A wealth tax
d. A proportional tax
e. A progressive tax

For Questions 3 and 4, consider the following marginal tax table:

Taxable Income Range	Marginal Tax Rate
$0 - $10,000	10%
$10,001 - $30,000	15%
Above $30,000	25%

3. Suppose Tahira has an income of $16,000. She is able to deduct $5,000 of her income as non-taxable. How much would she owe in taxes based on the table above?

    a. $0
    b. $1,100
    c. $1,150
    d. $1,500
    e. $1,650

4. Suppose Michal has an income of $50,000. She has is able to deduct $10,000 of her income as non-taxable, and she also contributes $2,000 to a non-taxable IRA. How much would she owe in taxes based on the table above?

    a. $4,200
    b. $6,000
    c. $8,500
    d. $12,500
    e. $14,000

5. Suppose in a simple economy with no foreign sector, the *mpc* is equal to 0.75. How much government spending (ΔG) would be needed to raise output by 100 million?

    a. 25 million
    b. 33.3 million
    c. 75 million
    d. 400 million
    e. None of the above

6. Which of the following is *not* an example of a transfer payment?

    a. Welfare payments to firms or individuals
    b. Social Security payments
    c. Unemployment compensation
    d. A corporate tax cut
    e. Payments of interest to holders of government bonds.

7. Suppose in a simple economy with no foreign sector, the *mpc* is equal to 0.9. How much of a lump sum tax (ΔT) would be needed to raise output by 100 million?

    a. 10 million
    b. 11.1 million
    c. 33.3 million
    d. 100 million
    e. None of the above

8. Suppose in a simple economy with no foreign sector, the *mpc* is equal to 0.8. If the government increased government spending by $30 million, and it simultaneously raised taxes by $30 million, how much will be the change in output (ΔY)?

    a. Output will increase by $15 million
    b. Output will increase by $30 million
    c. There will be no change in output
    d. Output will decrease by $30 million
    e. None of the above

9. Which of the following is *not* an example of a government outlay?

    a. Government spending on a national health care system
    b. Government spending on light rail systems and bicycle paths
    c. Housing subsidies for low-income households
    d. Tax cuts for wind and solar energy producers
    e. Child care vouchers for working single parents

10. Which of the following was one of the major sources of federal revenues in 2018?

   a. Personal income taxes
   b. Corporate income taxes
   c. Excise and estate taxes
   d. Both A and B
   e. None of the above

11. Which of the following was the largest category of government spending in 2018?

   a. Social programs, such as welfare
   b. Defense spending
   c. Social security, Medicare, and retirement
   d. Net interest on the debt
   e. None of the above

12. Procyclical policy ...

   a. refers to the use of fiscal policy to improve the performance of the U.S. economy
   b. refers to state/local governments tendency to exacerbate the business cycle.
   c. refers to Federal Reserve policy designed to minimize economic downturns
   d. refers to Chamber of Commerce efforts to encourage households to shop locally
   e. none of these are descriptions of procyclical policy

13. Which of the following was responsible for putting the budget back into deficit in 2001?

   a. The recession that started in the Spring of 2001.
   b. The 2001 Bush tax cuts
   c. The increased government spending of the Bush administration.
   d. Both A and B.
   e. None of the above.

14. The President drafts a budget proposal with new tax cuts and increases in government spending, and has it passed by Congress. This would be an example of:

   a. Automatic stabilizers
   b. Discretionary policy
   c. Contractionary fiscal policy
   d. Supply side policy
   e. None of the above.

15. The Obama Stimulus Program ...

   a. is also known as the "American Recovery and Reinvestment Act."
   b. added more than three million jobs according to the Congressional Budget Office
   c. probably averted a 21st century "Great Depression" according to some economists
   d. amounted to a major expansionary fiscal policy
   e. all of these statements are accurate

16. Crowding out refers to ...

   a. intended investment squeezing unsold inventories
   b. excess consumer spending competing with foreign demand for U.S. goods
   c. the demand for exports making U.S. goods for expensive for consumers
   d. government borrowing reducing the availability of private capital
   e. none of these

17. Table 10.1 (Different Multiplier Effects) suggests that ...

   a. making the Bush income tax cuts permanent would have the biggest tax cut impact
   b. a payroll tax holiday is not a very effective tax cut strategy
   c. temporarily increasing food stamps is more effective than any permanent tax cut
   d. cutting the corporate tax rate has a bigger impact than ANY other tax cut
   e. none of these statements are accurate

18. Which of the following is NOT an argument for not worrying about the size of the debt?

   a. Every country's government is indebted.
   b. Half of government debt is owed to U.S. citizens.
   c. The U.S. government pays interest in dollars, a desirable currency internationally.
   d. Government debt never even has to be paid off.
   e. All of the above are valid arguments.

19. Austerity…

   a. means that deficits are cut through either spending cuts or tax hikes.
   b. accurately describes recent U.S. fiscal policy.
   c. tends to cause deficits to rise rapidly.
   d. describes a set of policies that a government would pursue if it wanted to promote job growth.
   e. was favored by the Reagan Administration.

20. The debt ceiling refers to…

   a. the debt level at which the U.S. government runs out of money.
   b. the congressionally mandated limit on the size of the federal debt.
   c. the point at which the federal debt reaches 100 percent of GDP.
   d. a limit on federal debt imposed by the Treasury Department.
   e. the point at which interest payments on the debt fully exhaust next year's budget.

Answers to Active Review Questions

1. fiscal policy
2. regressive
3. effective tax rate
4. *– (mult)(mpc)*
5. balanced budget
6. outlays
7. automatic stabilizers
8. deficits
9. gross federal
10. False. Both Josh and Corinne are paying 20% of their income in taxes even though Josh's income is much higher than Corinne's income – this is an example of proportional tax system.
11. False.
12. False. It is still possible to expand an economy with a balanced budget. The balanced budget multiplier equals 1.
13. False. In the real world the multiplier is rarely this large. Econometric studies of the U.S. economy have suggested the multiplier is 2.0 or lower.
14. True.
15. True.
16. False, it is the other way round—an accumulation of deficits results in a debt.
17. A marginal tax rate only applies on one's additional income above a certain amount. An effective tax rate is obtained by dividing one's total taxes paid by total income, expressed as a percentage. One's effective tax rate tends to be much less than one's top marginal tax rate.
18. The multiplier used in this case is the same as the multiplier introduced in chapter 9: multiplier = 1/(1−mpc)
19. The government could increase government spending, increase transfer payments, or cut taxes.
20. It can either raise taxes, borrow, or print money.
21. The larger the economy, the easier it is to handle a deficit. A larger economy means higher incomes, and a greater ability for the government to collect tax revenues or sell government bonds to finance its deficit.
22. As the economy boomed, the automatic stabilizers kicked in and tax revenues rose. The Clinton administration also used discretionary policy, by raising taxes and thereby raising revenues that helped turn deficits into surpluses.
23. "Crowding out" is a reduction in the availability of private capital resulting from federal borrowing. "Crowding in" occurs when government spending boosts expectations and therefore induces intended investment.
24. A deficit occurs whenever available tax revenue is insufficient to finance government spending for that year. The money borrowed by the government to make up the difference adds to the existing debt. Hence, debt is the accumulation of deficit over many years.
25. In terms of dollars, yes, the debt has more or less risen throughout the 20th century, to its present level of over $21 trillion. But in relation to the size of the economy (GDP)—which is what we care more about—it has fluctuated considerably. It reached its highest

point, more than 100 percent of GDP, during World War II, but since then declined to under 40 percent in the late 1970s. Since then it has again been on the rise, recently again reaching over 100 percent of GDP.

Answers to Problems

1.

a. The income/spending multiplier = $1/(1 - 0.8) = 5$
So solving for ΔY = mult × ΔG,
100 million = 5 ×ΔG
ΔG = 20 million

b. Now we need to use the tax multiplier, - *mpc (mult)*
So solving for ΔY = -*mpc (mult)* × ΔT
100 million = -0.8 × 5 × ΔT
ΔT = 100 million/-4
ΔT = -25 million (a tax cut of 25 million would be needed)

c. The calculation is like part b, above, except instead of ΔT we have ΔTR. Thus, transfers of +25 million would be needed.

d. Increasing *G* (government spending) would do the least damage to the deficit, raising it by 20 million, rather than 25 million.

2.

a.

Household income	*mpc*	*Income/spending multiplier*	*Tax multiplier*
0-$30,000	0.9	10	9
$31,000 – 50,000	0.8	5	4
$51,000 – 80,000	0.75	4	3
$80,000 and above	0.6	2.5	1.5

b. Directing the spending increase or tax cuts to the lower income households would provide a greater stimulus, because it has a higher tax multiplier. Thus, it would do less damage to the budget deficit to achieve a given amount of stimulus. In other words, if the government directed tax cuts to the low-income households, it would need a smaller tax cut to expand the economy by a given amount, and this would do less damage to the deficit.

(Note: If one takes into account that *mult* may depend on an economy-wide average *mpc*, this answer would still be correct, but the difference would not be as large.)

3.

a. The income/spending multiplier = 1/(1-0.75) = 4
ΔY = mult × ΔG
ΔY = 4 × 40 million
ΔY = 160 million

b. The tax multiplier = - 0.75 (4) = -3
ΔY = -3 × ΔT
ΔY = -3 × 40 million = -120 million

c. The net effect of the two policies is:
$\Delta Y_{(a+b)}$ = 160 million – 120 million
$\Delta Y_{(a+b)}$ = 40 million
Yes, it expanded output by 40 million

d. A balanced budget rule means that one can't respond to severe emergencies, such as a natural disaster, war, or deal with a severe recession. Because the multiplier is only equal to one, it provides a fairly weak stimulus.

4.

a. The biggest deficit was created during the Obama years, when the government responded to the deep economic crisis of 2008 with large increase in spending and tax cuts; this raised the government deficit. However, if we look at the years before 2008, the Republicans (Reagan, G. Bush Sr., G.W. Bush Jr.) appear to be the big spenders, with their accumulation large deficits.

b. The emergence of the huge deficits under Reagan, G. Bush Sr., G.W. Bush Jr., and Obama could be from increasing government outlays (*G* and *TR*), and/or cutting taxes (*T*). The surpluses under Clinton could be from cutting government outlays (*G* and *TR*), and/or raising taxes (*T*).

c. No, changes in discretionary fiscal policy are not sufficient in explaining the emergence of deficits and surpluses, because a recessionary economy could trigger automatic stabilizers (increases in *G* and *TR*, and falling tax revenues), whereas a booming economy could bring forth increases in tax revenues and cuts in government outlays. Indeed, the figure of the U.S. real GDP growth shows a deep recession in 1981-82, which could help explain the emergence of deficits in the early Reagan period. And the figure shows strong growth rates in the late 1990s, which could help explain the emergence of surpluses under Clinton.

d. The economy under Clinton could have boomed for other reasons, such as the increased investor and consumer confidence, leading to increases in investment and consumption spending. These could have outweighed the contractionary effect of his fiscal policies. The surpluses came about not only from the tax increases of his discretionary policies, but also from the booming economy, which brought in increases in tax revenues as the automatic stabilizers kicked in.

e. The tax cuts for the rich will do little to stimulate the economy because they are directed to households with relatively lower *mpc*s, and thus have a smaller multiplier effect.

5.

Year	Tax Revenue	Military Spending	Civilian Spending	Total Spending	Surplus or Deficit	Existing Debt
2015	7.0	4.0	4.0	8.0	-1.0	100.0
2016	7.2	4.0	4.1	8.1	-0.9	101.0
2017	7.2	4.2	4.3	8.5	-1.3	101.9
2018	7.3	4.0	4.5	8.5	-1.2	103.2
2019	7.0	3.7	4.7	8.4	-1.4	104.4
2020	7.1	3.5	4.9	8.4	-1.3	105.8
2021	6.8	3.6	5.1	8.7	-1.9	107.1
2022	7.0	3.7	5.3	9.0	-2.0	109.0
2023	7.2	3.8	5.5	9.3	-2.1	111.0
2024	7.3	3.9	5.7	9.6	-2.3	113.1
2025	7.4	4.0	5.9	9.9	-2.5	115.4

Budgetland runs a deficit every year, so its debt gradually increases over the period, from 100.0 to 115.4.

6.

Year	Existing Debt	GDP	Debt-GDP Ratio
2015	100.0	200.0	50.00%
2016	101.0	206.0	49.03%
2017	101.9	212.2	48.03%
2018	103.2	218.5	47.22%
2019	104.4	225.1	46.38%
2020	105.8	231.9	45.63%
2021	107.1	238.8	44.85%
2022	109.0	246.0	44.31%
2023	111.0	253.4	43.81%
2024	113.1	261.0	43.34%
2025	115.4	268.8	42.93%

The debt to GDP ratio in this case is declining over time since GDP is rising much faster than the debt levels.

Answers to Self Test Questions

1. C	11. C
2. E	12. B
3. C	13. D
4. B	14. B
5. A	15. E
6. D	16. D
7. B	17. C
8. B	18. A
9. D	19. A
10. A	20. B