

If An Economy With $C = \$5000 + 0.6Y_d$, $I = \$1000$, $G = \$800$, $T = \$1000$, $NX = \$-200$, Where The Dollar Amounts

If An Economy With $C = \$5000 + 0.6Y_d$, $I = \$1000$, $G = \$800$, $T = \$1000$, $NX = \$-200$, Where The Dollar Amounts, understanding the components of this economic model can provide valuable insights into the functioning of a nation's economy. This article explores the given parameters, explains their significance, and demonstrates how to analyze the overall economic equilibrium using the Keynesian aggregate expenditure model.

Understanding the Components of the Economy

Before delving into calculations, it's essential to understand each component's role in the economy:

Consumption Function (C)

- The consumption function is given by: $C = \$5000 + 0.6Y_d$.
- **\$5000** represents autonomous consumption, the baseline spending when disposable income (Y_d) is zero.
- **0.6 Y_d** indicates the marginal propensity to consume (MPC), i.e., 60% of additional disposable income is spent on consumption.

Investment (I)

- Investment is a fixed amount: $\$1000$.
- Represents business expenditures on capital goods, which are not directly dependent on current income.

Government Spending (G)

- The government spends $\$800$ on public services and infrastructure.

Taxes (T)

- The government collects $\$1000$ in taxes.
- Taxes influence disposable income and, consequently, consumption.

Net Exports (NX)

- The net exports are $\$-200$, indicating a trade deficit, as imports exceed exports.

Calculating Disposable Income (Y_d)

Disposable income (Y_d) is the income available to households after taxes:

$$- Y_d = Y - T$$

- Here, $T = \$1000$, so:

$$Y_d = Y - 1000$$

Formulating the Aggregate Expenditure (AE)

The aggregate expenditure in the economy is the sum of consumption (C), investment (I), government spending (G), and net exports (NX):

$$- AE = C + I + G + NX$$

Substituting the consumption function:

$$- AE = (5000 + 0.6Y_d) + 1000 + 800 + (-200)$$

Express Y_d in terms of Y :

$$- Y_d = Y - 1000$$

So, the aggregate expenditure becomes:

$$- AE = 5000 + 0.6(Y - 1000) + 1000 + 800 - 200$$

Simplify this expression:

$$- AE = 5000 + 0.6Y - 600 + 1000 + 800 - 200$$

$$- AE = (5000 - 600 + 1000 + 800 - 200) + 0.6Y$$

$$- AE = (5000 + 1000 + 800 - 200 - 600) + 0.6Y$$

$$- AE = (5000 + 1000 + 800 - 200 - 600) + 0.6Y$$

$$- AE = (5600) + 0.6Y$$

Therefore, the aggregate expenditure function simplifies to:

$$- AE = 5600 + 0.6Y$$

Finding the Equilibrium Income (Y)

Equilibrium occurs when aggregate expenditure equals total income:

$$- Y = AE$$

- Substituting the expression for AE:

$$Y = 5600 + 0.6Y$$

Rearranged to solve for Y:

$$- Y - 0.6Y = 5600$$

$$- 0.4Y = 5600$$

$$- Y = 5600 / 0.4$$

$$- Y = 14,000$$

This means the equilibrium level of national income in this economy is \\$14,000.

Analyzing the Multiplier Effect

The multiplier effect measures how much total output (Y) changes in response to autonomous changes in spending. It is calculated as:

- **Multiplier = $1 / (1 - MPC)$**

Given $MPC = 0.6$:

- $Multiplier = 1 / (1 - 0.6) = 1 / 0.4 = 2.5$

This indicates that for every dollar increase in autonomous spending, total income increases by \$2.50.

Implications of the Net Exports (NX) Component

The negative net exports value (-\$200) suggests a trade deficit, which slightly reduces aggregate expenditure. If the trade balance improves (NX moves toward zero or positive), the overall equilibrium income would increase.

Policy Insights and Economic Interpretation

Understanding this model offers several insights:

Impact of Fiscal Policy

- Government Spending (G): An increase in G directly boosts AE, leading to higher equilibrium income.
- Taxes (T): Raising T reduces disposable income Y_d , decreasing consumption and aggregate expenditure, thus lowering equilibrium income.
- Autonomous Consumption (C): Changes in autonomous consumption (e.g., increased consumer confidence) shift the AE curve upward, raising income.

Trade Balance (NX) Influence

- A trade deficit (negative NX) subtracts from total expenditure, slightly dampening economic growth.
- Policies aimed at boosting exports or reducing imports can improve NX, positively impacting income.

Limitations of the Model

- Assumes constant MPC and autonomous spending.
- Does not account for price level changes, interest rates, or expectations.
- Simplifies complex economic behaviors into linear functions.

Conclusion

In summary, given the specified parameters, the economy's equilibrium income stands at \$14,000. The calculations demonstrate the significant role of consumption, investment, government spending, taxes, and net exports in determining national income. Policymakers can utilize such models to forecast economic outcomes and formulate strategies to foster sustainable growth. Understanding these fundamental relationships is essential for anyone interested in macroeconomic analysis, economic policy, or financial planning.

Additional Resources

- For further understanding of Keynesian economics, consider exploring textbooks such as "Macroeconomics" by N. Gregory Mankiw.
- Online tools and calculators can help visualize how changes in parameters affect equilibrium income.
- Stay updated with economic reports and analyses from institutions like the IMF or World Bank for real-world applications.

This comprehensive analysis not only clarifies the specific scenario but also provides a practical framework for evaluating macroeconomic policies and conditions.

Frequently Asked Questions

What is the formula for the consumption function in the economy?

The consumption function is $C = \$5000 + 0.6Y_d$, where C is consumption and Y_d is disposable income.

How is disposable income (Y_d) calculated in this economy?

Disposable income (Y_d) is calculated as $Y_d = Y - T$, where Y is national income and T is taxes.

What is the total autonomous spending (autonomous consumption plus autonomous investment and net exports) in this economy?

Autonomous spending includes autonomous consumption (\$5000), autonomous investment (\$1000), and net exports (-\$200), totaling $\$5000 + \$1000 - \$200 = \6000 .

How do you calculate the equilibrium level of income (Y) in

this economy?

The equilibrium income is found using the formula $Y = [C_0 + I + G + NX] / (1 - MPC)$, where C_0 is autonomous consumption, MPC is marginal propensity to consume, and the other components are investment, government spending, and net exports.

What is the value of the marginal propensity to consume (MPC) in this economy?

The MPC is 0.6, as given in the consumption function $C = \$5000 + 0.6Y_d$.

What is the formula to find the equilibrium income (Y) in this Keynesian model?

$Y = [C_0 + I + G + NX] / (1 - MPC) = [\$5000 + \$1000 + \$800 - \$200] / (1 - 0.6) = \$6000 / 0.4 = \$15,000$.

What is the equilibrium level of national income (Y) in this economy?

The equilibrium income (Y) is \$15,000.

How does an increase in government spending (G) affect the equilibrium income?

An increase in G shifts the aggregate demand curve upward, leading to a higher equilibrium income, calculated by adjusting the numerator in the Y formula accordingly.

What is the multiplier effect in this economy?

The multiplier is $1 / (1 - MPC) = 1 / (1 - 0.6) = 2.5$, indicating that an initial change in autonomous spending will be multiplied by 2.5 in total impact on income.

What is the net exports (NX) value and its impact on the overall equilibrium income?

Net exports (NX) are -\$200, which reduce overall equilibrium income by decreasing aggregate demand, as reflected in the calculation of total autonomous spending.

Additional Resources

If An Economy With $C = \$5000 + 0.6Y_d$, $I = \$1000$, $G = \$800$, $T = \$1000$, $NX = \$-200$, Where The Dollar Amounts

Understanding a country's economic health involves dissecting the intricate web of consumption, investment, government spending, taxation, and net exports. These components collectively shape

the overall income and output of an economy. As analysts and policymakers examine the specific dollar amounts associated with these variables, they gain valuable insights into the economic dynamics at play. In this article, we will explore what these figures reveal about a hypothetical economy, how they interact within the Keynesian framework, and what implications they hold for economic stability and growth.

The Foundations of the Economy: Key Variables and Their Significance

Before diving into the specifics of the dollar amounts, it's essential to understand the core variables provided:

- Consumption Function (C): $\$5000 + 0.6Y_d$
- Investment (I): $\$1000$
- Government Spending (G): $\$800$
- Taxation (T): $\$1000$
- Net Exports (NX): $-\$200$

Each of these variables plays a pivotal role in determining the equilibrium income level and overall economic performance.

Consumption Function: Understanding Marginal Propensity to Consume

The consumption function $C = \$5000 + 0.6Y_d$ suggests that:

- $\$5000$ is the autonomous consumption, i.e., the baseline level of consumption when disposable income is zero.
- $0.6Y_d$ indicates that 60% of disposable income (Y_d) is spent on consumption.

Disposable income (Y_d) is derived after taxes and is given by:

$$Y_d = Y - T$$

where Y is the national income, and T is taxes.

Investment (I): The Role of Business and Investor Confidence

A fixed investment amount of $\$1000$ indicates a stable investment climate or a predetermined investment plan, regardless of income levels in this simplified model.

Government Spending (G): Public Sector's Contribution

Government expenditure of $\$800$ reflects fiscal policy efforts to stimulate or manage economic activity through public projects, salaries, and services.

Taxes (T): Revenue Collection

Tax revenue of $\$1000$ affects households' disposable income and influences consumption behavior.

Net Exports (NX): Trade Balance Indicator

A -\$200 net export figure indicates a trade deficit, meaning the country imports more than it exports, which impacts aggregate demand.

Calculating Disposable Income and Its Impact

Given the tax amount:

$$[T = \$1000]$$

Disposable income (Y_d):

$$[Y_d = Y - T]$$

Since (T) is fixed, (Y_d) depends directly on (Y). The consumption function becomes:

$$[C = \$5000 + 0.6 (Y - T) = \$5000 + 0.6 (Y - \$1000)]$$

Simplifying:

$$[C = \$5000 + 0.6Y - \$600]$$

$$[C = \$4400 + 0.6Y]$$

This refined consumption function indicates that as national income increases, consumption rises proportionally by 60%.

Deriving the Aggregate Expenditure Function

The total planned expenditure (AE) in the economy comprises consumption, investment, government spending, and net exports:

$$[AE = C + I + G + NX]$$

Substituting the expressions and values:

$$[AE = (\$4400 + 0.6Y) + \$1000 + \$800 + (-\$200)]$$

Calculating:

$$[AE = \$4400 + 0.6Y + \$1000 + \$800 - \$200]$$

$$[AE = (\$4400 + \$1000 + \$800 - \$200) + 0.6Y]$$

$$[AE = \$6000 + 0.6Y]$$

This is the aggregate expenditure function, illustrating how total planned spending depends on the national income (Y).

Finding the Equilibrium Income

In Keynesian macroeconomics, equilibrium occurs when total production (Y) equals total planned expenditure (AE):

$$Y = AE$$

Substituting the aggregate expenditure function:

$$Y = \$6000 + 0.6Y$$

To solve for (Y):

$$Y - 0.6Y = \$6000$$

$$0.4Y = \$6000$$

$$Y = \frac{\$6000}{0.4}$$

$$Y = \$15000$$

Thus, the equilibrium national income is \$15,000.

This figure reflects the level of income at which the economy's total output matches the total planned expenditure.

Analyzing the Components at Equilibrium

With the equilibrium income established at \$15,000, we can analyze each component:

Consumption at Equilibrium

$$C = \$4400 + 0.6 \times \$15000 = \$4400 + \$9000 = \$13,400$$

Disposable Income

$$Y_d = Y - T = \$15000 - \$1000 = \$14,000$$

Total Expenditure Components

- Consumption: \$13,400
- Investment: \$1,000 (fixed)
- Government Spending: \$800
- Net Exports: -\$200

Total planned spending:

$$AE = \$13,400 + \$1,000 + \$800 - \$200 = \$15,000$$

which matches the equilibrium income, confirming the internal consistency of the model.

Implications of the Negative Net Exports

The - \$200 net exports figure indicates a trade deficit, which can have several implications:

- Dependence on Foreign Capital: The country may rely on foreign investment to finance the deficit.
- Impact on Domestic Industries: A persistent trade deficit might pressure domestic producers due to competition from imported goods.
- Exchange Rate Effects: Over time, a trade deficit could lead to currency depreciation, affecting inflation and import prices.

Fiscal Policy Considerations

The fixed values of G and T suggest a predetermined fiscal stance. Policymakers could manipulate these variables to influence equilibrium income:

- Increasing G: Would directly boost aggregate demand, raising equilibrium income.
- Adjusting T: Changes in taxes impact disposable income and consumption, influencing overall output.

For example, increasing G by \$200 to \$1,000 would:

$$[AE = \$4400 + 0.6Y + \$1000 + \$1000 - \$200 = \$6200 + 0.6Y]$$

New equilibrium income:

$$[Y = \$6200 + 0.6Y]$$

$$[0.4Y = \$6200]$$

$$[Y = \frac{\$6200}{0.4} = \$15,500]$$

This demonstrates how fiscal expansion can raise the economy's income level.

Broader Economic Insights

Analyzing these dollar amounts provides a window into the health and trajectory of the economy:

- The current equilibrium income at \$15,000 suggests a moderate level of economic activity.
- The marginal propensity to consume (0.6) indicates that consumers tend to spend a significant portion of their disposable income.
- The trade deficit (-\$200) signals reliance on foreign markets, which could pose vulnerabilities or opportunities depending on global conditions.
- Fixed investment and government spending offer stability but may limit responsiveness to changing economic circumstances.

Conclusion: What Do These Figures Tell Us?

The detailed examination of the dollar amounts in this hypothetical economy reveals a balanced yet nuanced picture. The calculations demonstrate how consumption, investment, government policy, taxation, and trade balance interact to determine overall income and economic stability. Policymakers can use such models to forecast the effects of fiscal adjustments, trade policies, or shifts in consumer behavior.

In real-world applications, these figures serve as vital indicators for designing strategies to promote growth, control inflation, or address unemployment. They underscore the interconnectedness of domestic policies and international trade, emphasizing the importance of a comprehensive approach to economic management. As economies evolve, continuous analysis of these variables allows for informed decisions that aim to foster sustainable prosperity.

End of Article

If An Economy With C 5000 O 6yd I 1000 G 800 T 1000 Nx 200 Where The Dollar Amounts

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