

Masters of the Economy:
A Game for Review and Understanding of Fiscal and Monetary Policy

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Abstract: In this classroom game, pairs or teams of students assume the role of “Masters of the Economy,” or directors of fiscal and monetary policy. The game has three versions; versions progress in complexity. The first version provides a review of the basics of monetary and fiscal policy tools. The second version introduces uncertainty: actual economic performance may not match the targets set by the team. The third version introduces the problem of coordination between monetary and fiscal policy authorities.

Key words: classroom game, fiscal policy, monetary policy

JEL Codes: A2, E5, E6

Economists tend to rely on lecture to convey material in the first course in economics (Becker and Watts 1996, Benzing and Christ 1997). Lecture may be an efficient technology for the transfer of information, but it is not an efficient technology for the development of economic intuition. This game adds to the growing literature on games, demonstrations, and simulations for use in courses in macroeconomics (for example, Hazlett and Hill 2003; Truscott, Rustogi and Young 2000). The purpose of this game is to give students a feel for, or intuition about, the difficulty of realizing monetary and fiscal policy targets.

After students first learn the basics of monetary and fiscal policy, they are sometimes surprised that business cycles still exist. They ask, “If we have these policy tools, why can’t we make GDP behave nicely?” This game allows students to experience the difficulties of formulating and coordinating fiscal and monetary policy for steady growth.¹ Students use common policy tools to attempt to achieve a constant three percent growth in GDP in their economy.

The most basic version of the game prompts students to categorize policy tools as either monetary or fiscal policy. Students then choose a specific policy action, such as a decrease in taxes, and indicate how it is expected to effect GDP. Finally, students calculate the magnitude of the desired effect. In the basic version, there is no uncertainty; the students’ desired effect is equal to the actual effect. A second version of the game is more realistic. The student’s desired effect may not obtain because of uncertainty. In a third version of the game, the teams of students divide into separate monetary and fiscal authorities. The more complex second and third versions of the game provide excellent intuition as prelude to discussion of impediments to policy effectiveness. As incidental

bonuses, the pencil and paper version of the game allows students to practice calculating percentages and graphing time trends, although there is a version of the game that uses an Excel workbook to crunch the numbers.

Masters of the Economy may be used effectively during class or as a group homework assignment. It is possible to complete all three versions the game in one hour using an Excel workbook; when students do their own calculations the first two versions can be completed in a single class period.

Mastering the Game

Students play in pairs or small groups. Each group is the macroeconomic policy team for its own economy. Each group is challenged to direct macroeconomic policy so that the economy maintains a steady three percent growth rate. The team that comes closest to steady three percent growth wins. In the case of a tie, the winner is the team with the smallest standard deviation of growth rates, i.e., the winner is the team that manages the most stable economy.

Game materials include instructions for the three versions of the game, a record table for each version to track policy actions, one chart to graph results, a set of 12 “POLICY” cards, and a set of 12 “UNCERTAINTY” cards. Complete materials appear in Appendix A. All of the game materials, including instructions and the Excel file template are available at <http://www.american.edu/academic2/~mhansen.html>.)

To begin play, students draw a POLICY card which names the policy tool that will be used in the current period. There are two POLICY cards for each of the major tools (taxes, government spending, open market operations, and the discount rate). There

is one POLICY card for the required reserve ratio. Students review how the tool is used, decide upon an action (such as “increase taxes” or “sell government securities” and how the action is expected to influence GDP. Students decide on a desired change in GDP and check their progress towards steady three percent growth. Three of the POLICY cards describe exogenous shocks to the economy. These cards instruct the students about how the shock changes GDP; students record this change and proceed to the next period, in which they choose a new POLICY card.

Table 1 shows a completed record table from the Excel workbook. Three periods of the game have been completed. The starting GDP is 100 billion doodles (doodles are the currency of the economy). In the first period, the team drew a tax POLICY card. The team recorded that taxation is a fiscal policy and decided to lower taxes to push GDP up a targeted 3 billion. In the second period the team drew a POLICY card indicating there was a negative exogenous shock to the economy that reduced GDP by 10 billion. In the third period the team drew an open market operations POLICY card. They recorded that open market operations are monetary policy, decided to buy government securities to increase GDP by a target of 16 billion doodles. Their choice brought ending GDP close to the steady cumulative 3% mark.

After *Mastering* the basic game, teams proceed to a more realistic version. While fundamentals of the game are unchanged, an element of uncertainty is added. After students draw the POLICY card and decide on the desired change in GDP, they draw an UNCERTAINTY cards. UNCERTAINTY cards have numbers between 0.25 and 1.75. The values are roughly normally distributed. Students calculate the product of their desired change in GDP and the UNCERTAINTY card value to arrive at the actual change

in GDP experienced in the period. Incorporating the UNCERTAINTY card value gives students a feel for how consumers, banks and business can thwart the best efforts of policy makers.

Table 2 shows a completed record table in Excel after the fifth period of the second version of the game. In the first period the team drew the government spending POLICY card and marked that government spending is fiscal policy. They decided to increase spending to increase GDP. The target increase in GDP was 3 billion, but they drew an UNCERTAINTY card with value 1.2, so the ending GDP was not 103 billion but 103.6 billion. In the second period the team drew the discount rate POLICY card and recorded that the discount rate is monetary policy. The team decided to increase the discount rate to make up for overshooting in the first period, and they set the target change in GDP at 1 billion. They drew an UNCERTAINTY card with value of 0.75, so ending GDP was 104.4 billion—lower than they had targeted. In the third period the team drew the tax POLICY card and aimed to increase GDP by lowering taxes, but wound up overshooting their target because of a high UNCERTAINTY card value. In the fourth period the team experienced an exogenous shock that pushed GDP down by 15 billion. In the fifth period the team stimulated the economy by decreasing taxes further. Their target change was 17 billion. An UNCERTAINTY card value of 1.1 brought them back to the cumulative 3% growth target of 115.9 billion.

In the third and most complex version of the game, teams split into two groups. One group becomes the fiscal authority, the other group becomes the monetary authority. Students set aside the POLICY cards describing the exogenous shocks and separate the fiscal POLICY cards from the monetary POLICY cards. The fiscal and monetary

authorities are not allowed to cooperate or consult. Each group within the team draws a POLICY card as before; POLICY cards are used more than once in this version of the game. After each group has chosen its target GDP, play resumes as a single team. The team draws an UNCERTAINTY card and calculates the total change in GDP as (change due to fiscal policy+change due to monetary policy)*UNCERTAINTY card value. This variation of the game gives students a feel for the difficulty of coordinating monetary and fiscal policy.

Table 3 shows a completed record table in Excel of the third version of the game after two periods. The fiscal authority drew a tax POLICY card, and the monetary authority drew an open market operations POLICY card. They recorded the necessary information and each authority aimed to increase GDP by the desired three percent. The UNCERTAINTY card value was greater than one, so that the combined effect of the monetary and fiscal policies was much higher than the target. In the second period, the fiscal authority drew a government spending POLICY card, and the monetary authority drew a discount rate POLICY card. Both groups set more modest targets in the second period. When the targets were combined with the UNCERTAINTY card value, the team brought ending GDP close to the steady 3% growth target.

The game can be easily adapted to incorporate review of the money multiplier and the government spending multiplier. The most straightforward way to include the multiplier effects is to announce the values of the marginal propensity to consume and the required reserve ratio at the start of the game. Instruct students to be specific in the actions taken. For example, rather than simply choosing an increase in taxes, students

should choose an amount for the tax increase that, in combination with the multiplier, will yield the desired target change in GDP.

After the game is played, students are better prepared to discuss the ways in which individuals, households, firms and banks can thwart the intentions of policymakers. They are also ready to discuss the political economy of macroeconomic policy. Some questions for discussion appear in Appendix B.

Conclusion

In this game, students have a chance to review the concepts of fiscal and monetary policy. They experience first-hand the difficulty of using policy tools to manage the business cycle, and they discover that a lack of coordination between monetary and fiscal authorities makes the job of providing for steady growth even harder.

References

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¹ The game improves upon a game written by Charles A. Stull and published the Classroom Activities ancillary for the first edition of N. Gregory Mankiw's *Principles of Economics*. The game described here is clearer for students than the original because it breaks the concepts to be mastered into separate versions of the game. Further, this game goes beyond the topics covered in the previously game. This game also provides more detailed instructions for both teachers and students; these instructions make the game useful as a homework assignment. Finally, this game offers the option of using an Excel workbook to aid in play.

Table 1

Record Table after Three Periods

MASTERS OF THE ECONOMY: RECORD TABLE

Period	Starting GDP	Policy Card	Fiscal or Monetary?	Action	GDP goes up or down?	Target change in GDP	Ending GDP	3% Growth Target	Percent Change in GDP for the Current Period
1	100.0	tax	fiscal	lower	up	3	103.0	103.0	3.0%
2	103.0	shock!				-10	93.0	106.1	-9.7%
3	93.0	OMO	monetary	Buy	up	16	109.0	109.3	17.2%

Table 2

Record Table for Version 2 After 5 Periods

MASTERS OF THE ECONOMY: RECORD TABLE VERSION 2 (WITH UNCERTAINTY)

Period	Starting GDP	Policy Card	Fiscal or Monetary?	Action	GDP goes up or down?	Target change in GDP	UNCERTAINTY Card Value	Ending GDP	3% Growth Target	Percent Change in GDP for the Current Period
1	100.0	Govt spending	fiscal	increase	up	3	1.2	103.6	103.0	3.6%
2	103.6	discount rate	monetary	increase	down	1	0.75	104.4	106.1	0.7%
3	104.4	tax	fiscal	decrease	up	4.5	1.75	112.2	109.3	7.5%
4	112.2	shock!				-15	1	97.2	112.6	-13.4%
5	97.2	tax	fiscal	decrease	up	17	1.1	115.9	115.9	19.2%

Table 3

Record Tables for Version 3 after Two Periods

MASTERS OF THE ECONOMY: FISCAL AUTHORITY RECORD TABLE FOR VERSION 3 (SEPARATION OF AUTHORITY)

Period	Starting GDP	Policy Card	Action	GDP goes up or down?	Target change in GDP	UNCERTAINTY Card Value	Actual Change in GDP due to Fiscal Policy	Actual Change in GDP due to Monetary Policy	Ending GDP	3% Growth Target	Percent Change in GDP for the Current Period
1	100.0	Tax	decrease	up	3	1.2	3.6	3.6	107.2	103.0	7.2%
2	107.2	govt spend	decrease	down	1	0.75	0.8	1.1	109.1	106.1	1.7%

MASTERS OF THE ECONOMY: MONETARY AUTHORITY RECORD TABLE FOR VERSION 3 (SEPARATION OF AUTHORITY)

Period	Starting GDP	Policy Card	Action	GDP goes up or down?	Target change in GDP	UNCERTAINTY Card Value	Actual Change in GDP due to Monetary Policy	Actual Change in GDP due to Fiscal Policy	Ending GDP	3% Growth Target	Percent Change in GDP for the Current Period
1	100.0	OMO	buy	Up	3	1.2	3.6	3.6	107.2	103.0	7.2%
2	107.2	Discount rate	lower	Up	1.5	0.75	1.1	0.8	109.1	106.1	1.7%

APPENDIX A

MATERIALS FOR MASTERS OF THE ECONOMY

APPENDIX B

DISCUSSION QUESTIONS

- Compare the path of GDP for the first version of the game (with no uncertainty) to the path of GDP for the second version. How much more variability in GDP was there in the second version?
- What are the possible sources of uncertainty? Why might a policy not reach its target? Specifically, what actions can individuals, households, firms and banks take that might leave policy short of its target? What might cause overshooting of a policy target?
- How might the results in the third version of the game be different if the monetary and fiscal authorities were allowed to cooperate?
- Do the fiscal and monetary authorities in the U.S. cooperate?
- Can you think of any drawbacks to merging fiscal and monetary authorities into a single macroeconomic management entity?