

FISCAL CHALLENGE – AN EXPERIENTIAL EXERCISE IN POLICY MAKING*

Mike Aguilar and Daniel Soques[†]

Abstract: In this article we introduce a pedagogical innovation that is designed to enhance our students' understanding of fiscal policy, in general, and the national debt and deficit, in particular. The innovation leverages the educational advantages offered through a competitive environment by pitting teams of students against one another with the goal of devising the best plan to put the U.S. on a sustainable fiscal path. The current incarnation of the competition, which is referred to as the Fiscal Challenge (FC), confronts the students with the specific task of stabilizing the U.S. Federal Debt to GDP ratio. This specific task may change from one competition season to the next, potentially adjusting with the economic climate and interests of the participants. The FC currently is being implemented as a nationwide, inter-university, extracurricular activity; however, it can easily be customized to fit within a traditional classroom setting.

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[†] Mike Aguilar (e-mail: maguilar@email.unc.edu) is a senior lecturer and Daniel Soques (e-mail: soques@unc.edu) is a graduate student in the Economics Department at the University of North Carolina at Chapel Hill. Aguilar is the corresponding author.

In this article we introduce a pedagogical innovation that is designed to enhance our students' understanding of fiscal policy, in general, and the national debt and deficit, in particular. The innovation, referred to as the Fiscal Challenge (FC), is a competition wherein teams of students from schools across the country are pitted against one another to design the best plan to put the U.S. on a sustainable fiscal path. That goal is set rather broadly, and as such may encompass many facets of fiscal policy. The current incarnation of the FC focuses specifically on the task of stabilizing the Debt to GDP ratio.

The FC is implemented as a nationwide, inter-university, extracurricular activity. Later in the paper, we will also consider alternative frameworks that may be more appropriate for a classroom setting.

In the following, we will discuss briefly four main aspects of the competition's structure: (1) the focus on fiscal policy, (2) the advantages of the competitive framework, (3) the reason for implementing this as an extracurricular activity, and (4) the usefulness of the specific task set before students.

Why Fiscal Policy?

The competition's focus on fiscal policy is motivated by three main factors. First, fiscal policy is an important determinant of the current economic landscape. The government's role in forming tax and spending policies helps to shape the pace of growth as well as the composition of the economy. Agents (i.e., our students) with a stronger understanding of the impacts of these policies may be better equipped to plan and participate in an economy so heavily influenced by such policies.

Second, our focus on long-term fiscal policy has the added benefit of being a topic of heated public debate among both academics and policymakers. The rise of student-led

organizations such as The Can Kicks Back¹ and Concerned Youth of America², which promote awareness of the growing debt and the associated problems, is evidence that students are paying more attention to these issues. As Aguilar and Soques (2013, and references therein) suggests, discussing current-events in the classroom helps to maintain student interest, and therefore promotes subsequent learning. These benefits are amplified when there is preexisting student interest.

Third, the FC's emphasis on fiscal policy may generate positive externalities for our students while they are still in school. Typically, fiscal policy is introduced in a Principles of Economics course through the lens of tax (or subsidy) incidence and burden. Intermediate microeconomics courses often address tax and subsidy issues in more depth, while intermediate macroeconomics courses typically address topics such as national debt, government spending, and tax policy. Other courses, such as health economics, labor economics, and public finance also may have direct or indirect connections with fiscal policy. By supporting a strong foundation in fiscal policy, a student who participates in the FC early on in their academic career may receive dividends in future coursework. Conversely, students who participate as upper-classmen will have the benefit of being able to apply the theoretical principles of fiscal policy learned through their previous coursework.

Why a Competition?

In addition to the aforementioned benefits of the choice of topic, the structure of the FC as a competition has equal pedagogical merit. In pointing out the benefits of a related activity called the Fed Challenge³, Brusentsev and Miller (2011) state that "Economists often argue that competition brings out real effort." Attle and Baker (2007) find that combining cooperative

learning and competition can lead to “enhanced learning opportunities,” especially in regards to students pursuing professional careers.

Students must combine skills and knowledge from a broad array of disciplines to do well in this competition. Reading comprehension, writing, and oral presentation abilities are all needed at different stages. By working in teams, students must collaborate and use their comparative advantages among these skills to craft a debt solution and convince others of its merits compared to competing proposals.

Why Extracurricular?

There are two main reasons why we structure the FC as an extracurricular activity. First, similar collegiate competitions have been quite successful when framed in this way. For instance, the Fed Challenge is a popular extracurricular activity focused on students assessing the macroeconomic implications of monetary policy. Also, there are numerous student-led investment clubs and stock trading competitions (Lawrence, 2008) that are designed as extracurricular activities. Other areas of study that have prominent extracurricular collegiate competitions include computer programming, marketing, robotics, and general science. To the best of our knowledge, no analogous competitive environment is available for fiscal policy at the collegiate level. Given the success of these various other extracurricular activities, we implement the FC in a similar manner.⁴

The second reason the FC is structured as an extracurricular activity is that doing so permits participation by a wide array of students, varying in seniority and discipline. For instance, students from business schools, political science departments, and numerous other departments, often attend economics courses with exposure to fiscal policy issues. As such, these non-economics students also may benefit from participating in the FC. Meanwhile,

regardless of discipline, the FC is within the reach of students of all levels of training. Due to its flexible design as an extracurricular activity, the FC need not be reserved for the most senior of students, as often is the case with capstone-style courses (Seeborg, 2008; Croushore, 2013).

Why this Specific Task?

The overarching policy goal of the FC is to put the U.S. on a sustainable fiscal path. Although laudable, this goal is amorphous, and thus might breed confusion among the competitors. In order to clarify the objective, we refine the goal by presenting the competitors with a very specific task.

During the 2014-2015 competition season, that task is to stabilize the Debt to GDP ratio at its current level by the end of a 25 year planning horizon (i.e., 70-75% by 2039). There are three main components to choosing this specific task: the metric, the time-horizon, and the numerical target. In choosing a metric, we recognize that there are many alternative measures of long-run fiscal sustainability. The Debt to GDP ratio (specifically, federal debt held by the public as a percentage of nominal gross domestic product) is a natural proxy, since it falls in response to both austerity measures and economic growth. This feature reflects the different avenues to achieve fiscal sustainability as well as the various tradeoffs faced when conducting fiscal policy. Also, the Debt to GDP ratio appears to be the common metric of debt serviceability in both academic⁵ and policy⁶ analysis.

We choose a 25 year planning horizon to match the time period considered in the Congressional Budget Office's Long-Term Budget Outlook. We choose this time period over shorter ones (e.g., 10 years) in order to properly account for potential long-term effects coming from infrastructure spending or similar avenues.

A number of difficulties arise when choosing the numerical target in the plan. Many economists agree that a stabilized Debt to GDP ratio is a necessary condition for the U.S. to have long-term fiscal sustainability.⁷ However, there is no clear consensus as to what exact level of this ratio is optimal. One could appeal to other international standards, such as the European Union convergence criteria, which requires that currency member-states' Debt to GDP be at or below 60% in order to meet the criterion of "sustainable fiscal finances." We believe this goal is too restrictive for the special case of the U.S. Instead, we opt for the more moderate objective of stabilizing the Debt to GDP ratio at its current level (70-75%) by the end of the 25 year time horizon.⁸

As mentioned above, the specific task set before our students may evolve with each competition season. How that specific task evolves is dependent, in part, on the evolution of the national fiscal debate. This stands in contrast to monetary policy exercises such as the Fed Challenge, wherein the policy goal for the Fed and the accompanying task set before the competitors is explicit: full employment and stable prices. One might reasonably expect the focus of the national fiscal debate in coming years to transition to topics like entitlement spending, or the debt ceiling. The specific task of the FC could transition accordingly from year to year. However, when choosing the task for our competitors we also attempt to weigh the practical consideration of posing a problem that is within the skillset of the typical undergraduate student to address.

DETAILS OF THE COMPETITION

Logistics

The basic structure of the competition includes the following broad steps: teams register, submit their written proposals to the organizer, the top proposals are identified, finalists give

their presentations to a panel of judges, and winners are announced. The timing of these steps is chosen carefully to avoid conflicts with student exams and University holidays, while at the same time conforming to the legislative calendar. A typical schedule for the competition is registration in the early fall, first round submissions are due in late winter, finalists are announced in early spring, and the final round is conducted in mid-spring. Given this schedule, teams have roughly five months to develop their proposals.

Prior to registration, the FC makes an effort to advertise the competition broadly through various means. We advertise extensively to colleges and universities across the country by contacting chairs and advisors in departments of interest (Economics, Political Science, Business, and the like). We also advertise by leveraging our partnerships through grass roots organizations such as The Can Kicks Back. We maintain a website⁹ to serve as a repository for relevant information, such as deadlines and other logistical information. After announcing the competition, we host a virtual information session to address questions about the competition's structure. This session is recorded and freely available on our website.

For interested parties, registration is completed by a team's faculty advisor. The registration form consists of basic identifying information, such as names, contact information, and affiliated college/university. The registration form is submitted via email to our Fiscal Challenge administrator, who confirms registration by sending each team a competitor number. Each number is unique, and is used to identify teams anonymously during the first round evaluation process.

Participants are required to be registered full-time or part-time students during the academic year in which the competition takes place. Each team must consist of between two and six members. We allow teams to add or remove team members at any time throughout the

competition. Each team is required to have a faculty representative from their institution, who serves as a liaison between the FC organizers and the team, as well as advisor to the team on substantive issues.

After registration the teams have the exciting, yet difficult, task of crafting their proposals. The faculty advisor serves as their primary resource for guidance. However, we supplement these efforts by providing some suggested materials¹⁰ via our website and email. Moreover, we use our website to convey the rules of the competition, judging rubric, and other relevant details that might aid in the creation of the team's proposals.

Proposals have no minimum length, but are not to exceed 50 pages, including supplemental materials. Moreover, no specific format is imposed by the FC, leaving the students to develop not only the substance, but also the presentation of their ideas. No identifying information is permitted in the proposals, including names, faculty advisor, college/university name, location, seal, symbols, or color schemes. The proposals are submitted via our website with a log-in and password associated with the team's unique competitor number. We impose such restrictions to facilitate anonymity and ensure an impartial review of each team's proposal.

A panel of judges evaluates the written submissions following the judging rubric detailed in the next section. Of course, the "response to judges' questions", and "teamwork" components are not relevant during the first round evaluation. However, all other criteria are used to identify the four teams with the best proposals. The competitor numbers of the top four teams are announced via the Fiscal Challenge website and competitor email listserv. As a precaution, we also identify the first and second alternate teams in the event that one or more of the four finalists cannot attend the final round.

During the final round of competition, the top four teams, along with their faculty advisors, convene in a single location (e.g., Washington D.C.). To the extent possible, the Fiscal Challenge makes all efforts to cover any travel, food and lodging costs for the finalists. These teams are joined by a panel of relevant experts, such as professors and policymakers, who serve as judges. These judges arrive having reviewed carefully each team's complete proposal. Then, each team is given approximately 15 minutes to summarize their proposal, followed by approximately 15 minutes of question-and-answer from the judges. Visual aids, such as PowerPoint presentations, are permitted.

Judging

Our judging rubric translates the six proficiencies detailed by Hansen (2001) into four actionable criterion: (1) understanding of the current fiscal situation; (2) depth and breadth of analysis; (3) creativity of the proposal; and (4) presentation and teamwork. Judges score teams from 1 (lowest) to 5 (highest) in each criterion, with equal weight placed on each in tallying the final score. Table 1 outlines the judging rubric and specific conditions a team must meet to obtain a given score. This rubric is made available to all participants and advisors for preparation purposes. In the following, we further explain the individual criterion through the relevant proficiencies of Hansen, and give examples of both good and bad proposals in each respect¹¹.

[Insert Table 1 about here]

We gauge students' understanding of the current fiscal situation through their assessment of the concerns at hand. This criterion aims to achieve the first two proficiencies of Hansen: *access* existing knowledge and *display command* of existing knowledge. A good plan in this regard would cite reputable and accurate information, in a manner that shows an understanding

of the appropriate limits of the data. A bad plan in this regard would cite inaccurate information, inappropriately exaggerate certain facets of the data, and display a general lack of understanding of the current economic and fiscal backdrop.

The depth and breadth of analysis refers to the students' assessment of the economic implications of specific fiscal policy alternatives, coverage of both short-run and long-run considerations, and legislative practicality. With this criterion, we target the third and fourth proficiencies of Hansen: *interpret* existing knowledge and interpret and *manipulate* economic data. We recognize the limitations of undergraduates' economic toolboxes. Therefore, a good proposal does not necessarily have to conduct its own independent econometric analysis. Instead, it could be based on reliable analysis from third parties, such as the Congressional Budget Office (CBO) or a recent academic study. A good proposal in this regard would be able to interpret such studies, support the conclusions with relevant economic data, and include these findings in their proper context. A bad proposal in this regard might misuse or misinterpret the conclusions of aforementioned studies, misrepresent supporting data, or fail to include pertinent aspects of the fiscal debate.

Given the limited time and scope of training of our competitors, each team faces a tradeoff between depth and breadth of their analysis. This is a realistic tradeoff that professional researchers and policymakers face, and as such, the FC facilitates experiential learning. In this respect, a good proposal would balance the degree to which it rigorously address a single topic, with the ability to consider all of the most relevant issues surrounding the current fiscal debate.

Within the judging rubric criterion for breadth and depth of analysis, we ask students to also consider the legislative practicality of their proposal. For example, a plan to eliminate the Department of Defense may help to stabilize the Debt to GDP ratio, but has virtually no chance

of being passed into law. In order to include such legislative realities without turning the competition into one of (primarily) political analysis, we present an ordering to these potentially conflicting forces. Specifically, we assign first-order importance to the economic consequences of each proposal, and place secondary importance upon legislative considerations.

Creativity is evaluated based upon a proposal's ingenuity and the differences from current law and well-advertised proposals. The purpose of this criterion is for students to attain the final two of Hansen's proficiencies: *apply* existing knowledge and *create* new knowledge. We want students to think "outside the box" and offer original solutions. However, we do not necessarily expect a proposal to provide completely new ways of combatting a certain fiscal issue. Rather, students could combine ideas from proposed legislation with their own economic analysis to create a novel solution. Conversely, a bad proposal in this regard would fail to offer any new policy suggestions nor provide a novel combination of previously proposed suggestions, but rather simply rehash the details of a previous proposal.

Notice that the secondary importance placed upon legislative practicality inside the "depth and breadth of analysis" criterion acts as a check-and-balance on the creativity of a team's proposal. A creative proposal may have no chance of becoming legislation if it is outlandish. Therefore, teams must balance the creativity of their proposals with its practicality.

Lastly, we include presentation and teamwork as a criterion to encourage these valuable skills, which are potentially useful in both academia and students' future careers. This criterion is not meant to target directly any of the individual Hansen proficiencies, but rather to foster the student's ability to communicate effectively these proficiencies on the aggregate.

BENEFITS TO STUDENTS

Undergraduate economics majors often complain about a lack of readiness to tackle real-world issues (Jones et al., 2010). The FC acts as a means for students to apply economic theory from the classroom to a current real-world problem. As stated by Bangs (2012), context-rich exercises, such as the FC, “can help students move past rote memorization of economic vocabulary and concepts to implementing these tools correctly.” Additionally, she states that “students find value in the expert-like problem-solving process” associated with context-rich exercises in comparison with the “novice-like problem-solving” associated with more structured problems. The FC presents students with an ill-structured problem, thereby challenging them to move beyond passive, formulaic methods and towards more independent approaches of problem-solving.

By participating in the FC students display a number of important attributes that act as differentiating signals when entering the job market. These include “soft” skills such as initiative, teamwork, leadership, creativity, as well as “hard” skills such as data analysis, policy analysis, and economic intuition.

Student Feedback

We conducted a smaller intra-university version of the FC during the fall semester of 2013 at the University of North Carolina at Chapel Hill (UNC-CH). In order to gauge student interest and perceived academic merits of the FC, we conducted pre- and post-competition surveys. The pre-competition survey provided us with demographic information of students who expressed interest in the competition, what incentivized students to consider participating, and students’ expectations of the project. The post-competition survey observed the participants’ experiences with the competition, and invited them to give feedback and suggestions.¹²

The 2013 competition was advertised broadly throughout UNC-CH campus, reaching students of heterogeneous majors and levels of seniority. The pre-competition survey was completed by those who attended a general interest meeting. This survey captured three demographic characteristics of the students who were initially interested in participating: (1) major field of study; (2) current GPA; and (3) year of study. A majority of participants were economics majors, although other majors such as finance, general business, and mathematical decision sciences were represented. Not surprisingly, participants tended to be from the right-tail of the GPA distribution. We have observed that students with higher GPAs tend to have a higher propensity to participate in extracurricular activities such as the FC. Moreover, we conjecture that students with low GPA's may not be able to commit the time nor effort needed to compete effectively.

The 2013 competition comprised primarily of sophomores and juniors. The lack of freshman participants was understandable given their perceived lack of familiarity with the subject matter. However, the lack of senior students participating did not meet our a priori expectations. Upon further examination, we discovered that a possible explanation for the lack of senior participation was their involvement in a similar extracurricular activity, the College Fed Challenge, which occurred simultaneously with the 2013 FC. We conducted a follow-up survey, and asked the senior members of the UNC-CH College Fed Challenge team if they would have participated in the FC if the two competitions did not run concurrently. The overwhelming response was yes; they would have competed in the FC were it not for the scheduling conflict with the Fed Challenge. This finding has motivated us to move the FC to the spring semester, so as to limit conflict with the Fed Challenge.

In addition to capturing the demographics of participants, we wanted to know what compelled students to participate. As educators and economists, we knew that students respond to a variety of different incentives. A priori, we identified five primary motivations for student participation: (1) To enhance their understanding of fiscal policy in general; (2) To enhance their understanding of national debt and deficit issues in particular; (3) To meet the esteemed judges; (4) The monetary award; and (5) To build their resume. Students were asked to weigh each of these incentives on a scale from 1 (Not Important) to 5 (Very Important). Table 2 displays the students' responses. Students on average placed the highest weight on enhancing their understanding of fiscal policy, in general, and national debt and deficit issues, in particular. Students' desire to learn was driven by the accumulation of knowledge, rather than the monetary reward or networking opportunities with the judges. This finding supports the argument that students have a pre-existing interest in fiscal policy issues, and aspire to have a deeper understanding of the subject.¹³

[Insert Table 2 about here]

The post-competition survey explored students' actual experiences with the competition, which we then compared to their expectations from the pre-competition survey. We used five questions to measure the perceived effectiveness of the FC as a teaching tool relative to a typical course in a student's major field of study. Table 3 details the questions posed, and the participants' responses, in both the pre- and post-competition surveys.

[Insert Table 3 about here]

We find that participants spent less time than they initially expected on the FC project, with 42% of participants responding in the post-competition survey that their time investment was "somewhat less than" a typical class in their major, compared with only 24.1% in the pre-

competition survey. However, 52% of participants found that the FC was much more effective than a conventional lecture course in their major as an educational tool.

We also asked students to assess the course-equivalent of the learning experience of the FC. We did this by offering a range of possible course numbers associated with various difficulty levels. For example, courses numbered at the 100 level are introductory in nature, while 500 level courses are advanced. The majority of the students' expectations and experiences both indicated that the FC learning experience is equivalent to that of a 400 level course. At UNC-CH, 400 level courses are comprised of intermediate microeconomics and macroeconomics, as well as other specialized courses for economics majors (e.g., Economic Development, Financial Markets and Economic Fluctuations, Health Economics, Industrial Organization).

To measure participants' overall perception of the FC, we asked them if they would recommend participating in the competition to other students. 100% of the respondents said they would recommend participating in the FC to other students, with 63.2% of them recommending it "highly." We also asked if the participants themselves would choose to participate in future iterations of the FC, and only three of the 19 participants responded "No."

In order to better gauge why other students chose not to participate in the FC, we obtained a control sample of 162 non-participating students from Professor Aguilar's Intermediate Macroeconomics course at UNC-CH during the Fall 2013 semester. As an amendment to the standard end-of-course questionnaire, Prof. Aguilar asked, "For those of you who did not participate in the Fiscal Challenge, can you please indicate why you did not?" The number one response was "Time Commitment" (44.4%) followed by "Didn't feel like I would be able to compete effectively given my understanding of the subject" (41.4%). Only 5.6% of the

students responded “Not interested in the subject matter,” giving us further evidence that there is pre-existing student interest in fiscal policy issues. The remaining 8.6% responded with “Other.”

The top three teams were rewarded with trips to Washington D.C. to meet with Congressional representatives and staffers. We asked these students to describe their experiences in garnering feedback for their budget proposals from these policymakers. One student said, "The staffers did a great job of giving a unique view on my team's plan, especially in terms of the political implications and feasibility. It was also interesting to see how the conflicting views they had of elements of our plan demonstrated the bipartisan divide within our current government. Overall, it was great to get political feedback straight from the source."

These survey results support out contention that the FC is an attractive learning tool and would be accepted by a wide variety of students. To this end, the 2014 competition will be expanded to a national stage, wherein teams of students from across the country will compete. It is important to note that these surveys gauge the perceived usefulness of the FC. In order to properly gauge the FC’s ability to achieve learning objectives, we need to expand to multiple campuses and follow a control group of students. Additionally, a thorough analysis would include a more substantial measure of achieving specific learning objectives (such as the attainment of Hansen’s proficiencies) through a standardized test to determine pre- and post-competition knowledge regarding fiscal policy and national debt issues. We plan on conducting such analysis in future iterations of the nationwide competition. Therefore, these survey results act as a preliminary step, which measures students’ perceived interest in an event such as the FC.

COSTS TO THE ADVISOR

There are two major costs facing a faculty advisor interested in sponsoring a team in the national FC competition. The first cost is the time and energy associated with logistical details. The

second is the costs associated with providing substantive guidance to students during the creation of the proposal and presentation. The inter-university nature of the competition mitigates the first of these costs. We, as directors of the FC, assume responsibility for a vast majority of the logistical and administrative details, such as coordinating teams, securing judges, deferring travel costs, and the like.

To mitigate the advisory costs, we recommend regular meetings between the faculty advisor and the student group to ensure significant progress is being made on a regular basis. The faculty advisor assists as a resource for additional data, policy analysis, and clarification of fiscal policy topics. Institutions with more than one team competing may wish to pool their resources to mitigate both logistical and advising costs further.

ALTERNATIVE DESIGN FOR THE CLASSROOM

The policy goal and organizational structure of the FC are flexible, and so can be customized to support the implementing instructor's specific pedagogical objectives and resource constraints. In the following we provide an example of how the FC can be implemented within a traditional classroom setting, rather than as an extracurricular activity.

There are several potential benefits to implementing the FC inside a traditional classroom. The revised structure (1) provides the instructor with greater control over the content, (2) creates an opportunity for student assessment, (3) permits smoother integration into the course curriculum, and (4) leverages the pedagogical advantages of active and experiential learning.

As with any classroom activity, there are costs associated with such an assignment. Two of the most daunting costs in this case are administrative and free-riding. First, by choosing to host the FC inside a classroom, the administrative costs with running the competition are transferred from the national FC coordinators to the implementing instructor. Such costs may be

substantially greater than for traditional assessment methods, such as homework or exams.

Second, given the compulsory nature of the in-class activity, the implementing instructor must deal with the issue of free-riders. Note that this problem is naturally limited when the FC is cast as an extracurricular activity since the participants are self-selected to be those who are most likely to participate actively.¹⁴

To offer a concrete example, we propose the classroom version of the FC to be cast as an in-class debate between groups of students. Approximately one week prior to the debate, the instructor poses a question or specific policy objective, such as “design a budget plan to reduce the Debt to GDP ratio to 65% by 2024.” The instructor then assigns teams of students to certain policy stances, such as “Fiscal Conservative” and “Fiscal Liberal.” Lastly, the students are assigned to read specific background materials like the President’s Proposed Budget or the CBO’s Long Term Budget Outlook. On the day of the debate, the first group of students (e.g., the Fiscal Conservatives) offers their answer to the policy objective posed by the instructor. The opposing group (e.g., the Fiscal Liberals) then gives a rebuttal, distinguishing both their analysis and proposal from their counterparts. The instructor follows this with a question-and-answer session to further assess the students’ knowledge and understanding of the subject. Assessment could be facilitated with the same judging criteria detailed earlier, or augmented to fit the instructor’s learning objectives.

This framework could be amended in various directions. For instance, although we believe the assignment naturally lends itself to a competitive framework, a more relaxed format could encourage a higher degree of collaboration between teams. This could also serve as an illustration of political parties working together to craft joint fiscal policy solutions. Alternatively, instructors could keep the competitive framework and institute a follow-up

assignment wherein teams must compromise to find a single, joint policy proposal by combining their individual team proposals.

Regardless of the format, the suggested experiential exercise allows students to potentially consider fiscal viewpoints different from their own, enhancing their understanding of the situation.

CONCLUSION

The FC is an educational tool aimed at enhancing students' understanding of fiscal policy, in general, and debt and deficit issues, in particular. This pedagogical goal is achieved through a competitive framework wherein teams of students devise detailed plans to meet a specific policy objective related to a real-world issue. We find the experiential nature of the FC to be a potent learning tool and attractive feature for our students. By leveraging the pedagogical and logistical framework we have developed, we hope to mitigate the implementation costs for interested faculty, while offering an innovative educational tool for students across a number of institutions and disciplines.

NOTES

¹ <http://www.thecankicksback.org>

² <http://www.concernedyouth.com>

³ The College Fed Challenge is a competition sponsored by the Federal Reserve, where students are judged on their understanding of macroeconomics and monetary policy. See Posatko, (2005) Brusentsev and Miller (2011), and Bansak and Smith (2013).

⁴ Similar to the other extracurricular exercises mentioned, an instructor can implement a small-scale version of the FC in a classroom setting. We will consider this in a later section.

⁵ See Reinhart and Rogoff (2010), Ghosh et al. (2013), and Herndon et al. (2013) among others.

⁶ Bernanke (2013) states, “To promote economic growth in the longer term, and to preserve economic and financial stability, fiscal policymakers will have to put the federal budget on a sustainable long-run path that first stabilizes the ratio of federal debt to GDP and, given the current elevated level of debt, eventually places that ratio on a downward trajectory.”

⁷ It is true that we are implicitly assuming the U.S. is currently not on a stable long-run fiscal path and may cause disruptions in the U.S. macroeconomy if not addressed. There is considerable evidence of this from public institutions (e.g. the Bank for International Settlements, the Congressional Budget Office, the Federal Reserve Board of Governors, and the Government Accountability Office), private institutions (e.g. Moody’s, Standard and Poors) as well as academic research [e.g. Checherita-Westphal and Rother, 2012; Greenlaw et al., 2013; Reinhard and Rogoff, 2010].

⁸ Note that the CBO uses this approach in its 2014 Long Term Budget Outlook. We could allow for some flexibility in reaching this target. For example, we could set a ten percentage point band

around the current level (e.g., 63% to 83%) and allow teams to set their own target inside that band. Therefore, they would first have to justify why their target rate attains long-term fiscal sustainability, and then outline their proposal in reaching that target.

⁹ <http://www.fiscalchallenge.org>

¹⁰ We suggested the Congressional Budget Office as the main data source for students. Other suggested sources for fiscal policy analysis include, but are not limited to, the Office of Management and Budget and The Committee for a Responsible Federal Budget, as well as the Federal Reserve Bank of St. Louis's Federal Reserve Economic Database for more general economic data.

¹¹ Examples of student submissions from the 2013-2014 competition at UNC-CH are available to registered participants of the current FC.

¹² The pre-competition survey was offered to all students who initially were interested in participating in the FC, yielding a sample size of 29. The post-competition survey was offered only to those students who participated in the actual competition, yielding a sample size of 19.

¹³ Those completing the survey were afforded the opportunity to write-in their own motivation under a category labeled "Other". Survey participants did not utilize this choice.

¹⁴ This free-rider problem could be alleviated by carrying out the FC as an independent research assignment for each student. Unfortunately, this would preclude the gains from teamwork. Alternatively, the instructor could chose to keep the team structure, but supplement her grading with peer evaluations to ensure individual accountability of each student.

TABLE 1: Fiscal Challenge Judging Rubric

Criteria	5-4	3-2	1
Understanding of the current fiscal situation	Always presents accurate information, and demonstrates thorough understanding of the associated concepts. Excellent responses to judges' questions.	Shows a rudimentary knowledge of the facts, and a basic understanding of the associated concepts. Provides adequate answers to judges' questions.	Misstates facts about the current fiscal situation, and displays a poor understanding of the associated concepts. Incorrect and/or incomplete answers to judges' questions.
Depth & breadth of analysis (Primary = budget and economic consequences. Secondary = legislative practicality.)	Uses advanced economic modeling to reinforce proposal. Addresses all, both primary and secondary, of the important issues.	Properly uses basic economic concepts to support policy recommendations. Addresses most of the important issues.	Lacks clear economic reasoning behind policy recommendations. Does not address all of the important issues.
Creativity	Presents a novel way to augment in size and/or composition currently proposed budget plans.	Alters slightly the components or magnitude of previously proposed budget plans.	Simply rehashes a previously proposed budget plan.
Presentation & Teamwork	Audio-visual components (PowerPoint slides, etc.) were polished and integrated properly. Each team member contributed to the oral presentation in a convincing fashion.	Audio-visual components only contained slight errors. A majority of team members contributed to the oral presentation.	Audio-visual components appear sloppy and figures are difficult to read. The oral presentation is primarily done by a sole team member, while others contribute very little.

TABLE 2: Pre-competition Survey – Incentives**Question: Why are you interested in participating in this competition?**

Incentive	Weight (Number of students who indicated)					Average Weight
	1 (Not important)	2	3	4	5 (Very Important)	
To enhance their understanding of fiscal policy in general	0	0	1	14	13	4.43
To enhance their understanding of debt and deficit issues in particular	0	1	1	15	11	4.29
To meet the esteemed judges	2	3	10	7	6	3.43
The monetary award	6	11	9	0	2	2.30
To build their resume	0	2	6	9	11	4.04
Other (Optional)	0	0	2	0	1	3.67

TABLE 3: Comparison of Pre-competition (N = 29) and Post-competition (N = 19) Survey Results

Self-assessed Grade							
	B- to F	B	B+	A-	A	A+	Median
Please rate your current level of understanding of <u>fiscal policy in general</u> using a grade scale.	Pre: 34.5% Post: 5.3%	Pre: 20.7% Post: 10.5%	Pre: 20.7% Post: 36.8%	Pre: 6.9% Post: 5.3%	Pre: 10.3% Post: 15.8%	Pre: 6.9% Post: 26.3%	Pre: B Post: B+
Please rate your current level of understanding of <u>national debt and deficit issues in particular</u> using a grade scale.	Pre: 27.6% Post: 5.3%	Pre: 37.9% Post: 5.3%	Pre: 13.8% Post: 15.8%	Pre: 10.3% Post: 10.5%	Pre: 0% Post: 26.3%	Pre: 10.3% Post: 36.8%	Pre: B Post: A
Course Level Equivalent							
	100	200	300	400	500		
My learning experience from the competition was equivalent to a _____ level course in my major.	Pre: 7.1% Post: 10.5%	Pre: 14.3% Post: 5.3%	Pre: 17.9% Post: 21.1%	Pre: 53.6% Post: 57.9%	Pre: 7.1% Post: 5.3%		
Time Investment							
	Much less than	Somewhat less than	About the same as	Somewhat more than	Much more than		
The amount of time I invested in the competition was _____ a typical class in my major.	Pre: 3.4% Post: 0.0%	Pre: 24.1% Post: 42.1%	Pre: 51.7% Post: 26.3%	Pre: 13.8% Post: 26.3%	Pre: 6.9% Post: 5.3%		
Effectiveness as a Pedagogical Tool							
	Much less effective than a typical class in my major	Somewhat less effective than a typical class in my major	About as effective as a typical class in my major	Somewhat more effective than a typical class in my major	Much more effective than a typical class in my major		
Learning through a competition is a unique pedagogical structure. The costs and benefits are very different than that of a conventional lecture course. How effective was the competition, relative to a more conventional lecture course, as an educational tool?	Pre: 0% Post: 5.3%	Pre: 10.3% Post: 10.5%	Pre: 24.1% Post: 15.8%	Pre: 51.7% Post: 15.8%	Pre: 13.8% Post: 52.6%		

TABLE 4: Post-competition Survey Results – Overall Assessment

Recommendation to Other Students			
	Not Recommend	Recommend with some hesitations	Highly Recommend
In talking with other UNC students about the competition, I would _____ participating in the Fiscal Challenge.	Post: 0.0%	Post: 36.8%	Post: 63.2%
Desire to Participate Again			
	No	Yes	
Would you participate in the Fiscal Challenge again, if offered?	Post: 15.8%	Post: 84.2%	

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