Harvard University | **Fall Term 2020**
Department of Economics | **Economics 980FF**

ECONOMICS OF THE CORONAVIRUS

Course Description

Introduction. Economics 980FF is a seminar intended for advanced undergraduates at Harvard intending to write a thesis. Students may prepare for the course by taking intermediate micro and macro theory and econometrics. The course will meet as a virtual seminar for two hours each week. The time will be divided equally between two students and each student will present a summary of one of the articles on the Reading List. The presentation will occupy 20-25 minutes and will be followed by discussion of the topic by members of the class. Since the seminar is virtual, members of the class will use Zoom for the presentations and the following discussion. I will serve as the moderator and will call on students who wish to participate.

Seminar. Students should prepare for the course by reading a brief report by the International Monetary Fund, *World Economic Outlook Update,* for June 2020 during the Course Preview, August 17-21. Students who wish to enroll should fill out the application attached to this Course Description. This application should be submitted electronically. Students will rank their choices among topics for discussion and will be assigned a topic by the instructor. Students will also write a short paper (10-12 pages), which will be due at the end of the course. Students will meet virtually with the instructor to discuss their plans for writing a paper.

The objective of Economics 980FF is to analyze the consequences of the coronavirus for the sustainable growth of the world economy. The coronavirus first appeared as a disease in December 2019 in Wuhan, the capital city of the province of Hubei in China. The population of Wuhan is eleven million of the total population of Hubei of sixty million. At first the disease spread gradually, but growth accelerated rapidly within Hubei and within six months had become a global pandemic, infecting six million people and causing almost 370,000 deaths in countries around the world. This is described by Lawrence Lau and Yan Yan Xiong in their forthcoming monograph, *The Covid-19 Epidemic in China*.

Global Spread. The global spread of the coronavirus is summarized by Richard Baldwin and Beatrice Weder di Mauro in their volume, *Mitigating the COVID Economic Crisis.* By January 30, there were 82 cases spread over 18 countries outside China. China blockaded and locked down Hubei and both the blockade and lockdown were successful in minimizing further transmission of the disease. Since March 8 the daily number of confirmed cases in Hubei has been close to zero. Meanwhile, the disease has continued to spread to Iran, Italy and other countries of Western Europe, and then to the United States, Brazil, other countries of Latin America, and the rest of the world.

Recent economic data from the International Monetary Fund has revealed an unprecedented decline in global economic activity due to the Covid-19 pandemic. First quarter GDP was generally worse than expected. High-frequency economic indicators pointed to a more severe contraction in the second quarter, except for China, where most of the country had reopened by early April. The pandemic intensified in a number of emerging market and developing economies, necessitating stringent lockdowns. In others the infections and mortality rates have been more modest due to successful lockdowns and voluntary distancing. Consumption and services output have dropped markedly and firms have cut back on investment when faced with sharp demand declines.

Mobility Depressed. Globally, lockdowns were most depressed during the period from mid-March to mid-May. Mobility has picked up in some areas, but remains low compared to pre-virus levels. Where economies have been reopening, activity may have troughed in April—as suggested, for example, by the May employment report for the United States, where furloughed workers are returning to work in some of the sectors most affected by the lockdown. The steep decline in activity comes with a catastrophic hit to the global labor market. This has been especially severe for low-skilled workers who are unable to work from home. The synchronized nature of the downturn has amplified domestic disruptions around the globe. Trade has contracted, reflecting weak demand and supply dislocations related to shutdowns.

Some bright spots mitigate the gloom. Following the sharp tightening of January-March, financial conditions have eased for advanced economies and, to a lesser extent, for emerging market economies. Sizable fiscal and financial sector market measures employed in several countries have forestalled worse near-term losses. Swift and, in some cases, novel, measures have enhanced liquidity provisions and limited the rise of borrowing costs. Based on downside surprises during the first quarter and weakness of high-frequency indicators during the second quarter, the updated outlook incorporates a larger hit to the first half of 2020.

Alternative Scenarios. The IMF's G-20 Model is combined with a detailed sectoral-based analysis to estimate the impact of two alternative scenarios: (1) a second COVID-19 outbreak in early 2021, and (2) a faster recovery from the lockdown measures implemented in the first half of 2020. These scenarios, which are summarized below, are presented in deviations from the June 2020 *World Economic Outlook* (WEO) *Update* projections (the baseline). While the baseline does not rule out a possible resurgence in cases in some countries, the first scenario assumes instead that a second major global outbreak takes place early in 2021. The disruptions to domestic economic activity in each country in 2021—resulting from measures taken to contain this second outbreak—are assumed to be roughly one-half the size of what is already in the baseline for 2020.

The halving of the impact reflects the assumption that containment measures will be less disruptive to firms and households because the share of vulnerable individuals will likely be lower and the measures will become better targeted at vulnerable groups, building on the experience gained regarding the effectiveness of measures that have been tried to date. As a result of the second outbreak, there is assumed to be additional tightening in financial conditions in 2021, relative to the baseline. The additional tightening is about one-half of the increase in sovereign and corporate spreads seen since the beginning of the pandemic, with advanced economies facing, on average, relatively limited tightening, especially in sovereign premiums, and emerging markets facing larger increases in spreads on both sovereign and corporate debt.

Despite the policy response, the outbreak is assumed to cause further longer-lived damage to the supply side of economies (scarring) starting in 2022, as increased bankruptcies lead to capital destruction, temporary slowing in productivity growth, and a temporary increase in trend unemployment. The additional scarring is assumed to be about one-half the size of what is already in the baseline, with emerging markets experiencing greater, longer-lived damage than advanced economies, given the more limited policy space to support incomes in those countries. The baseline projection assumes a gradual recovery in activity starting in the second half of 2020.

In the second scenario, it is assumed that the recovery is faster than expected, as greater confidence in efficient post-lockdown measures (social distancing and more effective testing, tracing, and isolation practices) lead to effective containment and less precautionary behavior by households and firms once the lockdowns are lifted. As a result of the faster recovery, financial conditions become more accommodative; for simplicity, the loosening of financial conditions starts in 2021. It is also assumed that the discretionary fiscal measures already included in the baseline are maintained in their entirety; that is, there is no partial rollback in response to the improved outlook. However, automatic stabilizers would imply less fiscal support overall as they respond endogenously to a faster dissipation of excess supply. The faster recovery also implies there is 50 percent less supply-side scarring than in the baseline starting in 2021.

Results. As in the scenarios presented in the April 2020 WEO, the decrease in activity is broadly similar for advanced and emerging market economies in the short term (2021): on one hand, advanced economies have a relatively larger share of services and are thus more directly exposed to social-distancing measures; on the other hand, tighter financial conditions and more limited fiscal responses in emerging markets amplify the impact in those economies. The hit to activity in 2021 is only partially corrected in 2022, with global output below the baseline, partly due to the additional supply-side scarring.

Under the alternative scenario, in which efficient post-lockdown measures in the second half of 2020 better contain the virus and generate greater confidence and a more rapid return to normal, global output improves relative to the baseline by about one-half percent in 2020. The recovery picks up steam in 2021, with global output above baseline, and with the relative loosening of financial conditions and the reduced scarring both contributing to the faster recovery. It is important to stress the considerable uncertainty surrounding these scenarios, especially Scenario 1.

The second outbreak could take place in the fall, in which case the negative impact on activity in 2020 would be even larger than in the current baseline. In addition, while the quantitative implications of current containment measures remain to be fully ascertained, the impact of a hypothetical second round is even more uncertain. Finally, a second outbreak could lead to a more severe tightening of financial conditions than assumed here, with the overall macroeconomic effect possibly amplified by nonlinearities stemming from greater scarring and financial pressures, especially in emerging markets.