

The FREDcast Manual

Last Updated: May 2016

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Is there a FREDcast FAQ?

I. Introduction

What is FREDcast?

FREDcast is an interactive forecasting game that uses FRED® data. Players forecast four macroeconomic indicators each month and earn points based on the accuracy of those forecasts.

II. FREDcast Forecasting Basics

What indicators do players forecast?

Players submit forecasts for Real GDP Growth¹, CPI Inflation, Unemployment Rate, and Payroll employment growth each month.

Are these indicators tracked as specific data series in FRED?

Yes.

- **Real GDP Growth:** the advance (or first) estimate of the percent change from the preceding period at a seasonally adjusted annual rate.
- **CPI Inflation:** the monthly compounded annual rate of change in the headline CPI number. This number measures prices for all items, including food and energy.
- **Unemployment Rate:** the seasonally adjusted monthly rate of unemployment, defined by the Bureau of Labor Statistics as the number unemployed as a percent of the labor force.
- Payroll employment growth: the seasonally adjusted monthly change in nonfarm payroll employment.

What does it mean for a data series to be seasonally adjusted?

For details on what seasonally adjusted means and why it is used, see <u>How does the BEA account for</u> seasonality in GDP? .

What does it mean for a data series to be annualized?

For details on what it means for data to be annualized (another way of saying compounded annual rate of change), <u>click here</u>.

¹ Forecasts for real GDP growth are a little different: Data for the other releases are reported on a monthly basis, but GDP data are reported quarterly. To maintain consistency, players submit one forecast each month for GDP in the current quarter, making three total forecasts for current-quarter GDP. All three forecasts target the same quarterly GDP release. See the table below:

Month of	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Forecast												
GDP Quarter	Q1	Q1	Q1	Q2	Q2	Q2	Q3	Q3	Q3	Q4	Q4	Q4
Forecasted												

Which month's data is forecasted?

Monthly data for the three monthly indicators are forecasted during the current month.² For GDP, the quarter forecasted in each month corresponds with the current quarter (see footnote 1).

What are the cut-off dates for entering the monthly forecasts?

FREDcast players submit final forecasts for the current month no later than 12 midnight on the 20th day of that month. In October, for example, a player might enter forecasts on the 15th day of that month. The player may revise any or all of the forecasts up until midnight (CST) on October 20th. The player's October forecasts are then scored in November, following the release of the official data. The pattern repeats for November and all following months.

When are the official data released?

Here is the usual schedule:

- GDP growth rate is released the last Friday of the month after the last month in the quarter. For Quarter 1 GDP scores are updated on the last Friday in April.
- CPI is released in the middle of the month following the forecast due date, usually between the 15th and the 17th. E.g., for the October 20th due date example, scores will be updated mid-November.
- Payroll employment growth is released on the first Friday of the month following the forecast due date. For the October 20th due date, data are released on the first Friday in November.
- Unemployment rate data follows the same schedule as Payroll employment growth above.

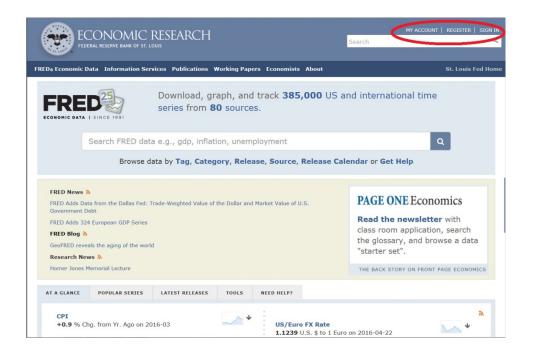
III. Creating a FREDcast account and logging in

How do I create an account and log into FREDcast?

Until June 17th please go to this URL: https://fred.stlouisfed.org/fredcast and sign in to your FRED account. If you don't have a FRED Account, click "Register" instead of "Sign In." If you are enrolled in a classroom that is playing the FREDcast game see the instructions How do students access the FREDcast site to enter forecasts and check scores?. After June 17th, please use this URL for FREDcast https://research.stlouisfed.org/useraccount/fredcast

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² In technical terms, this is a zero-horizon forecast.



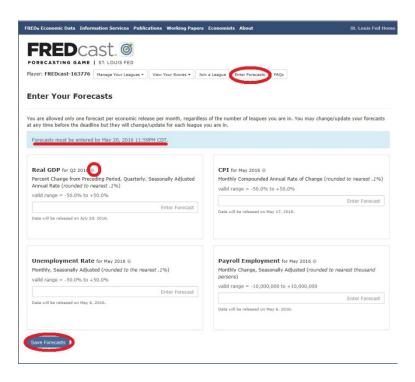
Register by entering first name, last name, email, and password on the form that pops up after clicking "Register."

Log into your FRED account and then go to https://research.stlouisfed.org/useraccount/fredcast/

IV. Entering Forecasts

How does a player enter forecasts?

In FREDcast, navigate to the **Enter Your Forecasts** page by selecting the **Play Now** button. The **Enter Your Forecasts** page has four boxes, one for each series forecasted. To see more information about each series click the question mark next to the series name. Below each series name is information about the units and valid ranges for forecasts.



Is there a special number format for forecasts?

Yes. For GDP Growth, CPI Inflation, and unemployment rate, forecasts must be rounded to the nearest tenth of a percent: In other words, they must be rounded to one decimal place. If a forecast is entered with more than one decimal, FREDcast will round automatically. For payroll employment growth, forecasts must be rounded to the nearest thousand persons. For example, in January 1998, nonfarm payroll employment grew by 124,830 persons. This number, rounded to the nearest thousand persons is 125,000. Do not enter any extra text besides the number and decimal point in your forecasts. Commas, percent signs, dollar signs, or other text will be removed and may lead to errors. Note that FREDcast follows the convention of using periods (".") as decimal separators, not commas.

How does a player save forecasts?

After entering all four forecasts, click the **Save Forecasts** button at the bottom of the forecast page. Note that players are required to enter a forecast for all four series to be able to save forecasts.

Can a player revise a forecast after it is saved?

Yes. Forecasts can be revised up until 11:59 PM CST on the 20th of each month. At that time, forecasts will be scored as entered. To revise forecasts before the cut-off, return to the **Enter Forecasts** page and change the numbers in the boxes and then select the **Revise Forecasts** button at the bottom of the page. If the **Revise Forecasts** button is not visible refresh the browser page.

What happens if I forget to enter a forecast before the cut-off date?

If no forecast is saved by 12 midnight on the 20th day of the current month, a value of 0 is automatically forecasted for each indicator.

V. FREDcast Scoring

How are the players' forecasts scored?

Forecasts for each of the four variables are scored separately for accuracy and then combined into a single score for that month called monthly points. Each of the four monthly forecasts is weighted differently, according to how difficult it has been in the past to forecast that particular economic indicator. (As explained more fully in footnote 3, the scoring weights are based on the magnitude of the sample variance of each release from 1970 to 2014.)



Do prior months' forecasts affect a player's monthly points?

No.

Exactly how are monthly points calculated?

There are several things to take into account in arriving at a player's monthly points.

To begin, the highest number of monthly points that can be earned for a given month is as follows:

- GDP growth = 250
- CPI Inflation = 250
- Unemployment rate = 250
- Payroll employment growth = 250
- Maximum possible monthly points = 1000

Forecasts that are more accurate (closer to the actual value) earn more monthly points than forecasts that are less accurate (further from the actual value). A player's exact monthly points for each of the

four forecasts are calculated based on the accuracy of the forecasts, weighted by the variance³ of each indicator.

Do prior monthly points affect the player's cumulative all-time score?

Yes. A player's monthly points accumulate to track overall performance in the form of an all-time score. The all-time scores are a weighted sum of monthly points; newer monthly points have a larger effect on all-time scores than older monthly points, so that more recent performance plays a larger part in the all-time scoring. However, a player who forecasts consistently well for a long period of time will have a higher all-time score than a player who has only started forecasting in the past month.

How does the all-time score weighting work?

A player's current monthly points receive the greatest weight in the all-time score, while prior monthly points are factored in on a diminishing weight basis. In other words, a player's all-time score is adjusted up or down by the points earned from previous forecasts. The effect of points earned from prior months' forecasts on the all-time score lessens over time, but will never be zero.

For example, a user who earns all 1,000 monthly points in one month but did poorly in previous months (or has not forecasted in the past) may receive a lower all-time score than someone who consistently forecasted with a smaller forecast error.

Is there a maximum all-time score?

No.

Does this mean that two players can end up with different all-time scores following identical monthly forecasts?

Yes. There are two scenarios where players may end up with different all-time scores following identical monthly forecasts.

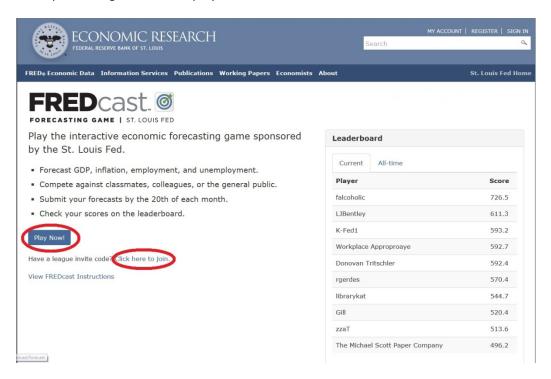
- If Player A and Player B forecast the same values in May resulting in the same monthly points for May, but Player B forecasted different values from Player A in April, then Player B's all time score will not equal Player A's.
- If two players have forecasted the same values in one month, but Player A has a longer history than Player B, Player A's all-time score will not equal Player B's.

³ The scores for forecasting the different economic indicators take into account how difficult it is to forecast each specific indicator. To be precise, the forecast errors for the four indicators are weighted according to the indicators' standard deviations for the sample period 1970:01 to 2014:12. Because the sample variance of GDP forecasts during those years was higher than the variance for the unemployment rate, the score for forecasting GDP is more forgiving of forecast errors than the score for the unemployment rate. For example, more points are awarded for a forecast error of 0.5 for GDP than for a forecast error of 0.5 for the unemployment rate.

VI. Playing the FREDcast Game

How do I play the FREDcast game in the public league?

If you are an individual FREDcast player who is not part of a private league click the **Play Now!** button to get started. You will be added automatically to the FREDcast public league and will compete against other public league FREDcast players.



Do I have to be in a league to play or can I play on my own?

All FREDcast players, including those who join private leagues, are members of the FREDcast public league. If you are not competing in a private league your scores will be private, except for those posted on the Top 10 leaderboard.

How do I play the FREDcast game if I received an email from FREDcast with a private league invite code?

If you received an email from FREDcast with a league invite code click the link below the **Click here to join** button. You will be taken to a page that prompts you to enter the league invite code from your email. Enter the code in the box and click the **Find League** button to search for your league.



If I join a private league can the league owner see my personal information?

It depends. When you join a league you may choose whether to let the league owner see your name and email address. If you join a classroom league, keep in mind you may need to let the league administrator see your personal information for grading purposes. Choose whether to select the box to enable your administrator to see your name and email address, then click **Join League** to continue.

How do I create a username?

All FREDcast players must have a username. Type your desired username in the box then click **Use My Username** to continue. If you prefer, click "Assign Me a Username" and a generic name will be assigned to you. Only FRED administrators can change a username. To review the **FRED Services Terms of Use** for creating a username on FREDcast, click <u>here</u>.



VII. Creating a Private League

What is a private FREDcast league?

A private FREDcast league is a collection of players such as members of a class or workers at a firm who compete against each other. These players' scores are displayed on a private leaderboard.

Who may create a private FREDcast league?

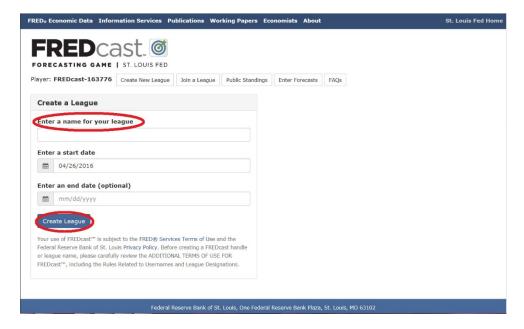
Anyone who is logged into FREDcast may create a private league.

How do I create a private FREDcast league?

Go here and then click the Create New League button.



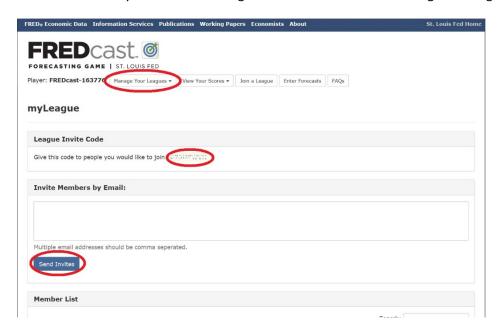
On the new web page enter a name for your league in the first box and then select a start date and an (optional) end date. Choose an end date if you want the league to disband after a certain date. The end date can be modified. Click **Create League.**



How do league managers invite others to join a private league?

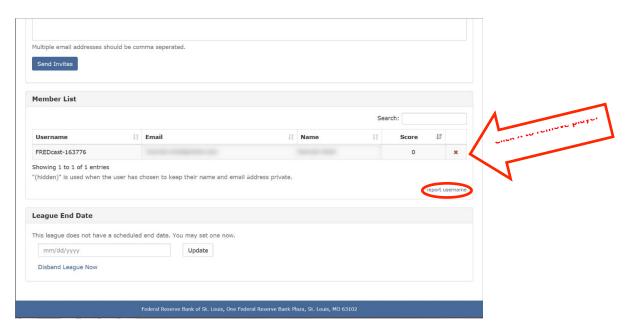
When you create a league you are taken to a league manager page that displays a **League Invite Code**. From this page you may send invites by email and manage current members. You can paste multiple emails separated by commas into the **Invite Members by Email:** box and then click the **Send Invites**

button. Invited members receive an email with the league code and start date. League managers may also contact individuals directly and share the league invite code listed on the league manager's page.



May a private league manager remove a member from the league?

Yes. The league manager may choose to remove a league member by clicking the red X next to a member's score.

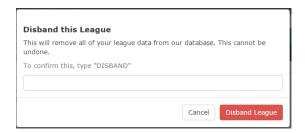


What should a private league manager do in the event a member creates an offensive username?

Click the **report username** button on the league manager page.

Can a private league be disbanded?

Yes. The league manager can disband the league by clicking the **Disband League Now** button at the bottom of the league manager page. Once a league is disbanded it cannot be reinstated.



Can league members continue to play the FREDcast game if their private league disbands?

Yes. Members who are in a league that disbands receive an email informing them that they may abandon the FREDcast game or continue as a player in the public league.

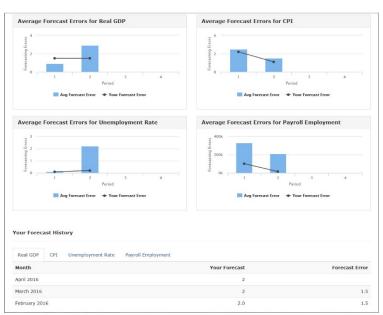
What is the FREDcast public league?

FREDcast is configured so that all players are included in the game's public league. All players' scores are tracked in the public FREDcast league, but only the Top 10—monthly points and all-time scores—appear on the public league leaderboard.

VIII. Player Scores and Results

Where are player scores and forecast results displayed?

Individual player scores, both monthly points and all-time scores—are displayed on the FREDcast stats page accessible by clicking on the **View Your Scores** tab. That page also displays a player's monthly points leaderboard position, monthly points, and average forecasting errors. A score breakdown for



each series forecasted is also displayed there. Graphs showing forecast errors and the player's forecast history are also available on this page. For information about private league scores see below.

How does a player view private league scores and results?

Under **View Your Scores** click the name of any league that appears. The player's scores, monthly points, score breakdown, average forecasting errors, forecast history, and forecast data for the latest month appear on the page.

IX. FREDcast Leagues and the Econ Lowdown Instructor Management Panel

How does a teacher access the FREDcast game through the Econ Lowdown Instructor Management Panel?

Log into the Econ Lowdown account or create one here:

https://www.econlowdown.org/index.php?register=42 Begin by logging into the Econ Lowdown teacher account. Then click the FREDCAST link on the far right of the Instructor Management Panel (IMP) page. The next page within the IMP prompts the teacher to create a new account. Teachers who have a FRED account may use that FRED account. Teachers also have the choice of creating a new account associated with their Econ Lowdown email address. Note that when an existing FRED account is associated with an Econ Lowdown email address, the teacher must use the same password for that FRED account.

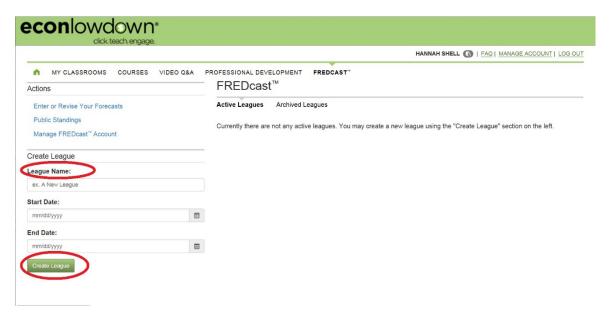


Can a teacher create a private classroom league through the Instructor Management Panel?

Yes. To create a league, complete the "Create League" form on the bottom left of the FREDcast IMP page. A teacher may create multiple leagues, but each Econ Lowdown classroom can only participate in one active league at a time. Select start date and end dates for each league. The end date can be amended any time before the selected end date.

How does a teacher add a classroom to a private FREDcast leagues within the Econ Lowdown?

A teacher's classroom leagues are displayed on the main Econ Lowdown page. To add a classroom to a league, click the **Add Classrooms** button below the league name. A list of available classrooms will be displayed in a popup box. Under FRED®'s Service Terms of Use only classrooms in which all students are 13 years and older are allowed to compete.



Is there another way for teachers to invite students to join a classroom FREDcast league?

Yes. The teacher clicks the **Manage League** button to view the League Invite Code for the league. The teacher may email the classroom league invite code to students or share it directly. Email sends a link to each email recipient. The student either clicks on the link in the email or goes here to create a FRED® account and log in. Students who already have a FRED® account log in to that account.

Next, students log into the <u>student page</u> and click on the FREDcast tab to complete their FREDcast™ registration. Remind students to select the check box to allow their instructor (a/k/a league administrator) to see all information in FREDcast.

How does a teacher manage a classroom league?

Teachers can view and manage leagues directly from the IMP's FREDcast page. Once created, a league is displayed on Econ Lowdown teacher FREDcast page. To add additional classrooms to a league, click the **Add Classrooms** button below the league name. A list of available classrooms will be displayed in a popup box. Remember: only add classrooms in which students are 13 years or older. In addition the teacher may change the League End Date by typing in a new end date and clicking the **Update** button.

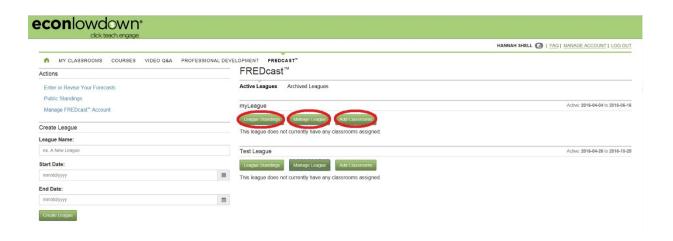
Sample IMP classroom League 3 League Standings Manage League Add Classrooms

Classrooms in League:

Sample FREDcast classroom 3

How does a teacher monitor student forecasts?

Clicking the **Manage League** button under any league listed on the teachers IMP FREDcast page allows the teacher to view a **Member List** and scores for each member of the classroom league. The name and email address will be hidden if a classroom player did not check the box allowing the teacher to see personal information.



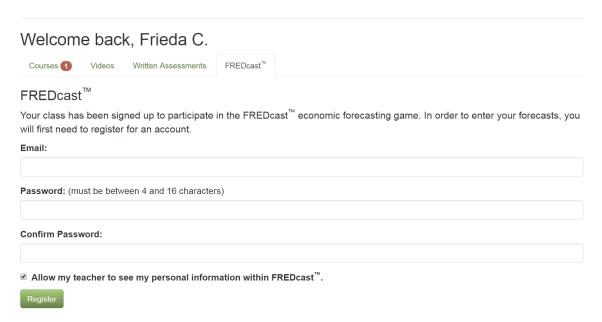
Can a teacher disband a league?

Yes. A league will disband automatically on the **League End Date** selected. Clicking the **Disband League Now** button causes the league to disband immediately. As with regular FREDcast private league players, when the league is disbanded, members of the classroom will retain FREDcast accounts in the FREDcast public league.

How do students register to play the FREDcast game through the Instructor Management Panel?

To join a classroom league a student begins by logging into the student account with the assigned username and password. Clicking on the **FREDcast** button at the top right of the student page takes the student to the registration page for the teacher-created league. Students submit an email address and create and confirm a password and click. Students then either create a username or have the game

generate one for them automatically. Remind students to be sure to check the box for **Allow my teacher** to see my personal information within FREDcast.



How do students access the FREDcast site to enter forecasts and check scores?

Students log in to the student account with the assigned username and password and click on the **Fredcast** button. Clicking the **Enter or Revise Your Forecasts** button takes the student to the main FREDcast page where they can enter or revise forecasts and view scores.

Once registered, how do students play the FREDcast game?

Students play the FREDcast game in the same manner as other players and can easily access the FREDcast game from the Econ Lowdown student page

X. FREDCast FAQs

Is there a FREDCast FAQ?

Yes. Click here