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Oct. 25, 2015, 8:03 a.m. EDT

# How much Americans' incomes could shrink because of global warming

Optimal average weather for an economy is 55 degrees Fahrenheit — and U.S. is there now

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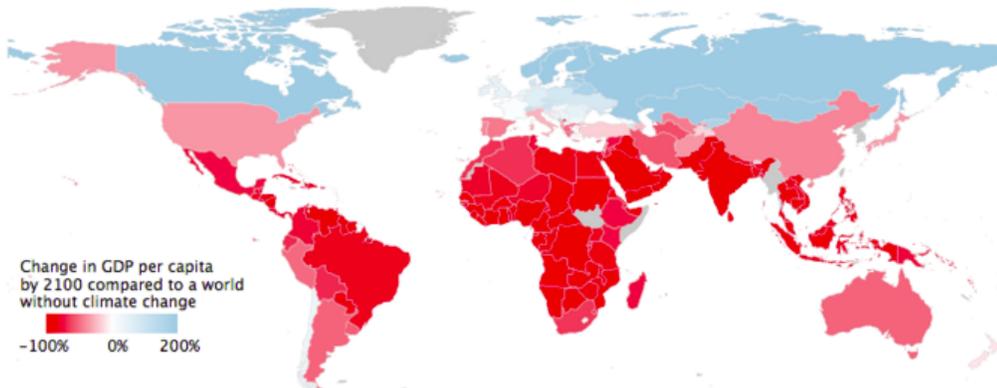
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Scientists estimate the impact of climate change on the world economy

**Your grandchildren may pay a bigger price for global warming than you thought.**

A hotter Planet Earth will cool down national economies, according to fresh research from scientists at Stanford University and the University of California, Berkeley .

Average U.S. income could shrink 36% by 2100 because of climate change from what it would be without global warming, they say. That is more than other, earlier studies have suggested.

But not all countries will suffer. Russia, Canada and countries in Northern Europe should benefit from warmer temperatures, according to the scientists' models, because they have yet to reach what the scientists called the optimal average temperature for an economy — 55 degrees Fahrenheit, roughly where the U.S. is now.

"We were surprised at how important temperature is for the global economy," said Solomon Hsiang, an associate professor of public policy at Berkeley and one of the co-authors of the study along with Marshall Burke, an assistant professor in earth system science at Stanford , and Edward Miguel, Oxfam professor in environmental and resource economics at Berkeley.

Global per capita gross domestic product will be down 23% at the turn of the next century if global warming isn't slowed, the study found. The impact will be more severe in China — average income will shrink 43%—and Mexico, where average income could plunge 73%. While scientists (and Pope Francis) widely believe global warming is happening, U.S.

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politicians are more divided on the issue. Even those who say the climate is changing disagree on whether humans are the cause.

This study was published in the magazine Nature ahead of a summit that begins Nov. 30, where governments hope to agree on fresh measures to reduce carbon-dioxide emissions blamed for global warming.

In coming to their conclusions, the scientists compared the performance of national economies when temperatures were normal over the 50 years to 2010 to when the weather was warmer or colder than average. They then looked at estimates of future temperature changes and forecasts for economic growth without climate change. Their data-crunching also showed that output rose as the average temperature approached 55 degrees and fell faster and faster as it got hotter than that.

The view on 2100 reflects the cumulative impact of what could be small changes, just as a headwind doesn't necessarily have an immediate impact on how long an airplane flight will take.

Don't expect the U.S. and other rich countries to be saved by more air conditioning, Hsiang said. Many people still have to be outside for work — farmers, construction workers and delivery people, for example. But even those whose work isn't outside avoid doing things in the heat, as Hsiang said he experienced on a recent trip to Arizona. That avoidance strategy could be keeping them from doing something that would be good for economic growth.

In addition, air conditioning, and the power systems needed to run it on peak days, is expensive. The money spent on that can't be spent on other investments that could make us more productive in the future, such as education, Hsiang noted.

Even if the U.S. doesn't get as hot as other countries, Hsiang said, its economy can be affected because of global demand for its goods and services.

Where is the average temperature now 55 degrees? The San Francisco Bay Area, Hsiang said, is pretty close.

So, it turns out, is New York City.

Silvia Ascarelli is a senior news editor for MarketWatch based in New York. You can follow her on Twitter @SilviaAscarelli.

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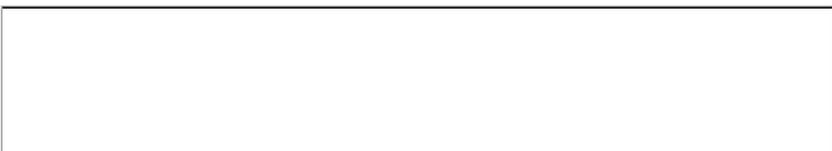
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NEWEST OLDEST

**j l** 13 hours ago

if you only knew the truth. a few are making hundreds of millions off this.  
they keep pushing this like drugs.

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**j l** 14 hours ago

come on now:

think with me....WHEN WAS THE LAST TIME ANY POLITICIAN DID ANYTHING  
THAT DID NOT BENEFIT AND LINE THEIR OWN POCKETS WITH CASH AND  
POWER FOR THEM TO MOVE ON SOMETHING!

the answer is shocking: NEVER.

so when we think of global warming fantasies it's really washington starting new  
branches of over reaching wasteful "blue ribbon panels" that get free meals on the  
tax payers backs as we pack cold lunches for our kids and working parents!

enough already!!!

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**j l** 14 hours ago

global warming is just another bait and switch.

making up crisis to scare the masses into calling on more over reaching government  
programs that are

ineffective and wasteful to the masses. stealing what's left of the "paycheck".

it's actually shameful what the al gores of the world are doing.

if the elite really want to help stop using personal jets and their many homes.

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**True Justice** 16 hours ago

Is the world coming to an end..!?!?!????

A topic with global warming in the title and no signs of Lavinia Chinkov....

The earth, moon and stars must be in alignment. !

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**ken scott** 17 hours ago

Yes our incomes would shrink because these dopes would charge us a life time of  
income to fix a hoax that it really is.

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**Rick Deckard** 19 hours ago

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If we give all our money to Al Gore and his kind, how much will the temperature go down ? Seriously ?

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**ken scott**

17 hours ago

@Rick Deckard none

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**Ronald Wraygun**

22 hours ago

Only a bunch of yahoos at Univ. CA Berkeley - Can dream up a study comparing a world without climate change to a world with climate change..

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**LAWRENCE KARCH**

23 hours ago

I wonder what are the error margins for this 55 def F prediction: maybe +/- 20 deg?

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**Old Man**

23 hours ago

This is nothing new as the gospel of Green says you can do with less than generations past. So why would that not include income. The gospel of Green also creates a further class divide as those that have made their money before the rules changed are okay while you can do with less. So no news here.

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**roger chaple**

23 hours ago

2100 predictions already?

How's this sound world peace, no more hunger, people living on the moon and Mars and finally flying cars that run on carbon.

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**BWHAHAHAHAHAHAHAHAHAHAHAHA  
BWHAHAHAHAHAHAHAHAHAHAHAHA**

22 hours ago

@roger chaple They can't even predict next weeks weather let alone what's going to happen in 2100.

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**JOHN BRIGUGLIO**

23 hours ago

I'm sure that's a real scientific study.....  
As accurate as all the climate models of the past.

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**EISTAU Gree-Vance**

23 hours ago

I feel so guilty just for existing that I would like to pay a carbon tax to a big wasteful government, because they will fix the climate. I really believe this.

Well, actually, I don't really believe that. I just hate capitalist energy producers.

I could just do what I believe is right, conserve energy, be as green as I can, and live and let live.



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**Gary Johnson**

23 hours ago

In the year 2525, if man is still alive

Actually, if you eliminate all the hot air and flatulence from liberals the temp. would only be 0 deg.

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**Jeff Reuter**

23 hours ago

**@Gary Johnson**

Zager and Evans - You're dating yourself - LOL

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**Ed Koerp**

23 hours ago

**@Gary Johnson** correct, someone sang a song about that many years ago, I can't remember the group.. anyone?

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**EISTAU Gree-Vance**

22 hours ago

"I won't be around when the world ends, so the only thing that I'll recycle is your girlfriend"

Bloodhound gang - late 90s

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**John Newman**

23 hours ago

The sky is falling, the sky is falling! What should I do? I know, vote for Hillary. She'll fix everything! [Sarcasm]

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**Jeff Reuter**

23 hours ago

**@John Newman**

All we need to change the weather is higher taxes and more federal regulation. /sarc off

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**Mike Bryant**

23 hours ago

**@John Newman** You're acting like the Queen needs to be voted for.

i don't understand...

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**John Newman**

22 hours ago

**@Mike Bryant @John Newman**

I put sarcasm in brackets [ ] at the end. That means I was being facetious...treating serious issues with deliberately inappropriate humor; being flippant.

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**Jeff Reuter**

23 hours ago

Blaming the shrinking incomes of Americans on the weather - outstanding work of deflection!

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**Ronald Wraygun**

23 hours ago

We may pay more for air conditioning, but heating will be cheaper. The growing season will be longer too. The farmers can go out in December,.

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2  Like Reply

**ken scott**

17 hours ago

**@Ronald Wraygun** They can grow three crops.

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**Vince Page**

23 hours ago

The real story is that two major issues were identified this month with the climate prediction software used by the UN and others:

<http://bit.ly/1OYlhVS>

Scaremongering should be put on hold at least until the software is fixed. Oh, I forgot, there's a big climate conference coming up in Paris at the end of November. No time for logic.

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**Thomas Ham**

1 day ago

Liberals' only fear is that their oceanfront property will fall into the ocean.

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**James Edwards**

1 day ago

Well!!! FINALLY something the people who own this country and do everything and are responsible for everything can get behind regarding climate change- that salaries will be much lower because of it- yeap now they can really get behind not wanting to do anything to change it as they will be paying much lower salaries than now- YIPEEEEE!!!

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**Thomas Ham**

23 hours ago

**@James Edwards**

Republicans love to pay higher salaries...as a result of improving earnings.

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**Ed Koerp**

1 day ago

If the democrats keep spending, giving away free stuff, and taking from only the rich, and everyone else does not have to pay something, it won't take very much longer and your disposable income will shrink by MUCH MORE than 36% in a much shorter timeframe for sure....

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### PAUL PILGRIM

1 day ago

This global warming thing is confusing? I have seen satellite maps measuring ice cap size and they show that the caps are increasing in size. Something is wrong here folks.

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### Thomas Graham

1 day ago

HA HA HA HA HA HA!!!!

The public debt is \$18 trillion!!!! Our grandchildren already have to pay that.

Why would global warming cause us to do anything different if the national debt doesn't?

And the national debt is actually real!!

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### Dean Moriarty

1 day ago

**@Thomas Graham**

The public debt is \$18 trillion!!!! WE are already having to pay for that.

HA HA HA ha ha .... oh.

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### Thomas Ham

1 day ago

**@Dean Moriarty**

Contrary to Liberal thought...reducing the rate at which the annual deficit grows is NOT paying down the debt.

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### Walter Snell

23 hours ago

**@Thomas Ham @Dean Moriarty** Of course not, but if the velocity of the change of the deficit continues we will have surpluses soon.

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### EISTAU Gree-Vance

22 hours ago

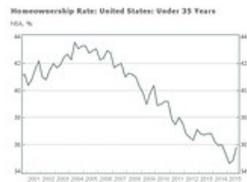
No one is predicting surpluses. CBO says velocity is heading toward higher deficits by the end of this decade. If we're still here of course.

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