The Global Economy

Introduction & Overview

This course is about countries
- Their economic and business environments
- Featuring
  - Data
  - Enough economics to make sense of it

Three modules
- Long-term economic performance
  - What are the challenges of running a business in [Argentina | France | Brazil | China | India]?
- Short-term economic performance
  - How's the economy doing?
  - How does it affect my business?
- Economic crises
  - Are there signs of serious trouble on the horizon?
  - What can we do about it?

Gapminder
- What do you see?
  - http://www.gapminder.org/world/ (growth, human development index, etc)
- Questions that might cross your mind
  - What do you see?
  - Where are the business opportunities? The challenges?
  - What's going on in [China | India | Argentina | Brazil | ...]?
  - Other thoughts?

About participation
- An important part of the class
  - More fun for all of us if you pitch in
- Ways to participate
  - Make a comment
  - Ask a question
  - Share an experience
  - Post a comment or link on Announcements & Discussion
About participation

- Guidelines
  - Feel free to disagree — politely, please!
  - Also with me (I was wrong once)
  - Facts are always good
  - Novices: please ask questions, it helps everyone
  - Experts: don’t scare your classmates

What’s happening?

- Regular feature
- Bring your ideas, I’ll bring mine
- Read The Economist
  - Order now if you haven’t already

What’s happening?

- Take your pick
  - Argentina’s default: What happened? Who’s the villain?
  - Corporate taxes: Should they pay more? Why don’t they?

What’s happening?

- Anything else cross your mind?
Current conditions in the US

- How’s the economy doing?
- How can you tell?
- What does that mean for your business?

Real GDP

Real GDP growth (yoy & qoq*4)

Current conditions revisited

- What else would you look at?

Economic crises

Crises

- What countries are in trouble?
- How can you tell?
- How did they get that way?
About the course

- It’s about economic performance
  - Of countries
  - And the businesses in them

About the course website

- Everything’s on the website:
  https://sites.google.com/site/nyusternglobal/home
  Or search: #nyuecon global
- The outline contains
  - Topic summaries
  - Assignments (with links!), slides, video
  - And something extra

About Announcements & Discussion

- Access by
  - Signing up for email delivery
  - Or viewing online
- You can use it to
  - Find a group
  - Post comments and links
  - Ask questions about assignments
  - Answer questions asked by others
- I’ll use it to
  - Post announcements about the course
  - Answer questions
About slides

• Catalyst for class discussion
• Not intended to be read on their own
• More than we need: don’t panic if we skip some
• Subject to change without notice

About assignments

• Problem Set #0
  – Individual – everyone must do it
  – Math and spreadsheet review
  – Due at the start of our next class
• Problem Sets #1 to #4
  – Do in groups of up to four people
  – Unlimited marriage and divorce
  – Due dates noted in red on website
• Practice Problems A to D
  – Not graded
  – Useful review and preparation for exams

About quantitative content

• Course is a mixture of quantitative and qualitative
• Like business
• Like life?

About the book

• Custom designed for this course (“bespoke”)
• More focused and concise than most
• Distributed in class for free, also posted online
• Sold by Amazon for $9
• [Extra credit: write a good review?]
• Skim before class, read again afterwards
About me

- Grew up in Pittsburgh
- PhD Yale
- Research interests
  - International capital flows
  - Fixed income and currency markets
  - Emerging markets
- Other interests
  - The Steelers
  - Basketball, biking, Buffy, books, beer

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About John Campbell

- TF/Grader
- Graduate student in economics
- Experienced TF
- A resource for you

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About getting help

- With problem sets
  - Post questions on Announcements & Discussion
  - Check same to see what others have asked
  - Email me: I’ll respond directly AND update Announcements
- With anything else
  - Post a question on Announcements & Discussion
  - Email me
  - Stop by
  - Buy me a beer after class

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About grades

<table>
<thead>
<tr>
<th>Participation</th>
<th>Outliers &amp; Tiebreakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Sets</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>35%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>45%</td>
</tr>
</tbody>
</table>

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About class videos

- Available roughly an hour after class (cross fingers)
- Link on course website (when I track it down)

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About the syllabus

- Read it, it’s a contract between us
What have we learned?

As Haiku

Read book before class
If you need help ask for it
Website is knowledge

Objective

- Know what these headline numbers are
  - (Real) GDP: how much stuff did we produce? growth rate?
  - Inflation: how much did average prices change?
- Why do we need this?
  - Common vocabulary (like financial statements for businesses)
- Do at high speed now, reinforce with constant use

Real GDP (yoy growth rate)

Source: FRED

US inflation

Source: FRED

GDP per capita (USD, PPP adj)

Source: World Bank, World Development Indicators
Roadmap

- GDP: Gross Domestic Product
- GDP: What the numbers look like
- Expenditures and financial flows ("identities")
- Prices and quantities
- Second thoughts

GDP

- GDP = Gross Domestic Product – and Income
- Standard bottom-line number
- Total value of production in a geographic area
  - Sum value added across all production units
  - By convention we don’t subtract depreciation ("gross")
- Three approaches to the same answer
  - Value added ["GDP"]
  - Income (value added is income for someone) ["GDI"]
  - Final sales or expenditures (the end of the value chain) ["GDE"]

GDP: example 1

- Example
  - Farmer produces wheat, sells it for 100
  - Miller buys the wheat, produces flour, sells it for 175
  - Baker buys the flour, makes bread, sells it for 300
- What is value-added for each producer?
- What is GDP?
- Who eats the bread?
### GDP: example 1

<table>
<thead>
<tr>
<th>Producer</th>
<th>Farmer</th>
<th>Miller</th>
<th>Baker</th>
<th>GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value-added</td>
<td>100</td>
<td>75</td>
<td>125</td>
<td>300</td>
</tr>
<tr>
<td>Final sales</td>
<td>0</td>
<td>0</td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>

### GDP: example 2

- **Barley farmer**
  - Sales = 10
  - Rent = 3
  - Farmer’s profit = 7
- **Brewer**
  - Sales = 110
  - Rent = 30
  - Wages = 70
  - Barley input = 10 (CCGS)

### GDP: example 2

<table>
<thead>
<tr>
<th>Producer</th>
<th>Farmer</th>
<th>Brewer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value-added</td>
<td>10</td>
<td>100</td>
<td>110</td>
</tr>
<tr>
<td>Income</td>
<td>10</td>
<td>100</td>
<td>110</td>
</tr>
<tr>
<td>Final sales</td>
<td>0</td>
<td>110</td>
<td>110</td>
</tr>
</tbody>
</table>

### GDP: investment & government

- Investment not an input cost
  - Like corporate financial statements
  - Except: we never subtract depreciation
- Government purchases valued at cost
  - If the government produces goods and services, we value the output at whatever the input cost is
GDP: example 3

- Computer maker
  - Sales = 100
  - Wages = 65
  - Materials = 10
  - Owners’ income = 25
  - New building = 15
- What is value added?
- What is income?
- What is final sales?

<table>
<thead>
<tr>
<th>Concept</th>
<th>CM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value-added</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>Final sales</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Concept</th>
<th>CM</th>
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<tbody>
<tr>
<td>Value-added</td>
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</tr>
<tr>
<td>Income</td>
<td>90</td>
</tr>
<tr>
<td>Final sales</td>
<td>100</td>
</tr>
</tbody>
</table>

GDP: example 4

- Government
  - Wages = 75
  - Rent = 25
- What is value added?
- What is income?
- What is final sales?

<table>
<thead>
<tr>
<th>Concept</th>
<th>Govt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value-added</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>Final sales</td>
<td></td>
</tr>
</tbody>
</table>

GDP: example 4

- Government
  - Wages = 75
  - Rent = 25
- What is value added?
- What is income?
- What is final sales?

<table>
<thead>
<tr>
<th>Concept</th>
<th>Govt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value-added</td>
<td>100</td>
</tr>
<tr>
<td>Income</td>
<td>100</td>
</tr>
<tr>
<td>Final sales</td>
<td>100</td>
</tr>
</tbody>
</table>

GDP: imports & exports

- The issue
  - GDP is what we make
  - Final sales is what we buy ("expenditures")
  - How do we reconcile the two?
- Adjust final sales: add exports, subtract imports
  - Exports are things we make but don’t buy
  - Imports are things we buy but don’t make

GDP: example 2 revisited

- Barley farmer in Canada
  - Sales = 10
  - Rent = 3
  - Farmer’s profit = 7
- Brewer in the US
  - Sales = 110
  - Rent = 30
  - Wages = 70
  - Barley input = 10 (COGS)
GDP: example 2 revisited

<table>
<thead>
<tr>
<th></th>
<th>Canada</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Producer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value-added</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final sales</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

GDP: example 2 revisited

<table>
<thead>
<tr>
<th></th>
<th>Canada</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Producer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value-added</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Income</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Final sales</td>
<td>10</td>
<td>110</td>
</tr>
</tbody>
</table>

* Remember: subtract imports

GDP: The Numbers

GDP as value added by industry

GDP as income by type

Expenditures & financial flows
Expenditure flows

- Allocate GDP among purchasers of final goods:
  \[ Y = C + I + G + NX \]
  - \( Y \) = GDP
  - \( C \) = sales to households ("consumption")
  - \( I \) = sales of capital goods to firms ("investment" = "capex")
  - \( G \) = purchases of goods and services by government
  - \( NX \) = net exports (exports minus imports)

GDP as final sales by expenditure

Saving and financial flows 1

- Allocate flows of assets
  \[ Y – C – G = I + NX \]
  \[ S = I + NX \]
  - We’re consolidating households and government
  - \( S \) = gross domestic saving (purchases of assets)
  - \( NX \) = net purchases of foreign assets

US saving and investment

Saving and financial flows 2

- Separate household and government
  \[ (Y – C – T) + (T – G) = I + NX \]
  \[ S_p + S_g = I + NX \]
  - \( T \) = taxes net of transfers paid by households to govt
- Warning: many measures of saving, all different
- Call me if this ever comes up

Prices & quantities
US consumer prices

Prices and quantities

• What we’ve seen so far is “nominal GDP”
  – GDP measured at current prices, in local currency units
• If nominal GDP goes up
  – How much is more stuff? (more “real GDP”)
  – And how much higher prices? (“inflation”)
• Or ask same question of Wal-Mart’s sales
• Problem
  – There’s no clear answer
  – Or rather: several answers, equally sensible but different

Prices and quantities

• Our problem: find P and Q so that
  \[ NY = PQ = p_1q_1 + p_2q_2 + \text{etc} \]
  – NY = Nominal GDP = GDP at current prices (a “value”)
  – p,q = price and quantity of a specific product
  – \( P,Q \) = “average” price (“price level”) and quantity (“real GDP”)

• Growth rates
  – Of Q: real GDP growth
  – Of P: inflation
• How do we compute P and Q?

Prices and quantities

• Method 1 (“fixed price method”)
  – Find average quantity Q using “base-year” prices
  – Find “average” price from \( P = NY/Q \) (“deflator”)
• Method 2 (“fixed quantity method”)
  – Find average price P using “base-year” quantities
  – Find “average” quantity from \( Q = NY/P \)
• Problems
  – Both make sense, but answers are different
  – Choice of base year matters too
  – We don’t need to know the details

Curing inflation in Argentina

• Voters concerned about inflation
• Former president instituted “new methodology”
  – Only certain products are in the official price index
  – Prices of those products subject to “persuasion”
  – Inflation lower
• What happened next
  – Official products cheap, but not available [why?]
  – Unofficial estimates of inflation more than double official rate
  – Economists arrested for producing private inflation estimates
• “The IMF and Argentina,” The Economist, Feb 9, 2013:

Prices in Argentina

• “The IMF and Argentina,” The Economist, Feb 9, 2013:
Second thoughts

Do we care about GDP?

• Bill Gates
  – “You can’t eat GDP.”
• Bill Easterly
  – “Mr Gates apparently missed the lecture that listed the components of GDP, such as food.”
  – WSJ, March 2007

Do we care about GDP?

• The obvious
  – GDP per person reflects income and standard of living
• The less obvious
  – Correlated with many other things we care about: life expectancy, child mortality, poverty
  – Recall Gapminder
• But it’s one number, not the answer to all questions

Do we care about GDP?

Per capita GDP: $47k  Per capita GDP: $34k
Avg weekly hours: 35  Avg weekly hours: 29

Do we care about GDP?

• Jones and Klenow, “Beyond GDP”
  – Compute economic welfare by combining measures of consumption, leisure, mortality, and inequality
  – Result: correlation with GDP per person is 0.95

Do we care about GDP? (2000)

Source: Jones and Klenow, “Beyond GDP”
Do we care about GDP? (growth, 1980-2000)

Fine points

- Home production not counted in GDP
- Black market transactions not counted either
- Some “income” not in GDP
  - Capital gains (houses, equity)
  - Interest on government debt
  - Returns on foreign assets
- Call me if you ever have to deal with this

Source: Jones and Klenow, “Beyond GDP”

Macroeconomic data

- Caption for old New Yorker cartoon:
  - “Final, revised government figures for the fourth quarter of 1981 now indicate that the Yankees, not the Dodgers, won the World Series.”

What have we learned?

- GDP measures output, income, and expenditure
  - Per capita GDP is wildly different across countries
  - Labor gets about 2/3, “capital” 1/3
  - Expenditures: \( Y = C + I + G + NX \)
- Real GDP measures the quantity of output
- Inflation measures the change in average prices
- Macroeconomic data are like sausages

Problem Set #0

- Due at start of next class
- Should look professional
- Start now!

Something for the ride home

- Should we save more?
- As individuals or as countries?
- Why? Or why not?
- Examples?
- Add your thoughts on the discussion page