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HW4

1. “Rivalry” is the feature of a good that makes it usable by only one person at a time. For example, a pair of pants is a rival good. If I am wearing a pair of pants, no other person can wear the same pair of pants. An example of a non-rival good is a painting in a museum. If I go to the museum and see the painting, this does not diminish the ability of other people to go to the museum and see the painting. (At the extremes of demand, such as the extremely high demand to see the Mona Lisa, a painting may become a partly rivalrous good because of crowding.) Every physical good is partly rivalrous because it has to be physically located somewhere. For example, every painting is located in one city rather than another, so the ease of enjoying the painting is greater for people who live in that city rather than other cities. Intellectual Property might be purely non-rival.

Rivalry matters for calculating immigrant’s fiscal effect because the cost of providing immigrants with public services depends on whether (and to what degree) those services are rivalrous. For example, providing immigrants with military protection costs nothing because military protection is a non-rival good. It is not plausible that foreign armies will be more likely to attack the US if the US brings in immigrants, so the current level of military protection is unchanged by the influx of immigrants. This means that natives get the same level of military protection as before, and the some of the cost of military protection is now borne by immigrants.

One method of calculating the fiscal effect of immigrants that seems correct at first glance is to divide total government spending by total US population, take that number to be the value of services provided to each citizen, and then compare immigrants’ tax contributions to that number. As explained in the paragraph above, that method is mistaken and it will result in

overestimates of immigrants' fiscal burden (equivalently, underestimates of immigrants' fiscal benefit.) That method effectively treats all government services as completely rivalrous, like pairs of pants, rather than non-rivalrous, like military protection.

2. Old age programs matter a lot for calculating immigrants' fiscal effect for two reasons. First, payments into old age programs make up a large part of total taxes. Most Americans pay more for social security and medicare than for all other taxes combined. For that reason, the fiscal effect of immigration on old age programs is a large portion of immigrants' total fiscal effect. Also, spending on old age programs is rivalrous. For reasons explained in question 1, rivalrous programs are the ones to look to for possible negative fiscal effects of immigration.

The second reason is time-discounting. Most immigrants are working age – few immigrants are children or retirees. This means that the money that immigrants will eventually be paid by social security and medicare is far in the future, and hence heavily discounted in calculations of immigrants' net fiscal effect. Contrastingly, the money that immigrants pay *into* social security and medicare today is not discounted.

To give a sense of the size of the discount, consider a 30 year old immigrant. The immigrant will start paying into social security and medicare immediately, but will not start collecting benefits until she reaches age 65. This means that the first year of SS and medicare payments to that immigrant are discounted by a factor of $(1+n)^{35}$ where n is the discount rate. There is no consensus on the correct discount rate to use. I will use a rate of 7.2% which is equal to the average nominal rate on BAA bonds over the last century

(<https://www.thebalance.com/stocks-vs-bonds-the-long-term-performance-data-416861>)

$(1+.072)^{35} = 11.5$, meaning that at a discount rate of 7.2%, the first year of old-age program

payouts to that immigrant are discounted by a factor of 1.5 in the calculation of present-value financial impact. Payouts in subsequent years are discounted by an even larger factor.

One feature of old age programs make this time-discounting especially important. Contributions and payouts from old age programs are measured in nominal dollar terms. Therefore, inflation tends to reduce the payouts relative to the contributions. This means that unlike other government programs, old age programs are such that the nominal, not real rate is the appropriate one to use for PDV calculations.

Therefore, immigrants have a large positive net fiscal effect on old age programs. Immigration increases the pool of young people relative to the pool of old people, thus making programs like social security and medicare more sustainable (at least for now.)

7. The two reasons that immigration might harm trust in receiving countries. 1) Immigration increases the number of people who were either born in, or have ancestry in low-trust countries. 2) Immigration increases diversity per-se and diversity per se reduces trust according to some scholars.

Reason 1: There is large variation in levels of trust between countries. By definition, people in low-trust countries have lower levels of trust, on average, than people in high-trust countries. If immigrants are drawn from the sending country's population without regard to their individual trust level, and if immigrants retain their low-trust attitudes after arrival, then it follows that immigration from low-trust countries must reduce the average trust level in the receiving countries. Furthermore, research has shown that trust is strongly transmitted across generations. If we look at white Americans who know which countries their ancestors came from, we find their trust level is highly predicted by the trust-level of their ancestor's country of

origin. With a wider sample of Americans and with a control variable for black race, the relationship between an individual's trust level and their "ancestral trust level" is not as strong but is still substantial. Moreover, immigrants have children, meaning that the average trust level in receiving countries would be reduced not only by the increase in numbers of first generation immigrants who were born in low-trust countries, but also, in the long run, by the increase in people whose ancestry is from low-trust countries, regardless of where they were born.

Reason 2: Some scholars, such as Robert Putnam, have argued that diversity per se reduces trust, regardless of the ancestral trust level of the constituent groups. This story is importantly different from the story that immigration from low-trust countries reduces trust. Putnam's story implies that immigration even from countries with the *same* trust level would reduce average trust by increasing diversity.

Reason 1 is more important in practice. Even taking Putnam's results at face value, the magnitude of the effect he finds is very small.

10. Pre-assimilation is the process whereby immigrants become acclimated to American culture before they arrive in America. Pre-assimilation has become more common in recent decades because of changes in technology, and because of the increased prevalence of American culture worldwide. In 1900, few people outside of America would have been familiar with American customs. Now, American movies and pop songs are consumed worldwide and people all over the world copy American styles of dress. Inexpensive transportation and the internet have made it much easier for immigrants in America to keep in touch with family members back home. This keeps immigrants in contact with their culture of origin, but it also increases the exposure of people in the home country to American culture. Similarly, the internet makes it

easier to learn English on one's own initiative. Popular movies and tv shows also help to spread the English language.

Pre-assimilation is important because it affects the rate at which immigrants assimilate to the American mainstream. Consider Paul Collier's diaspora dynamics model. Faster assimilation means a smaller diaspora community, and hence less risk of factionalism in the receiving country. If immigrants are already partly Americanized when they arrive, so the thinking goes, then the problems associated with culture clash will be mitigated, and immigrants who were born in very different cultures will more quickly be able to become productive members of society.

I am skeptical that pre-assimilation really addresses concerns about assimilation. Many foreigners and second generation immigrants do adopt aspects of American culture, [but only the worst elements of American culture](#). It is unsurprising that young people around the world are happy to adopt the "easy" aspects of American culture; drug use, loose sexual mores, Western styles of dress and action movies. It is not clear that this represents assimilation to the deeper elements of Western culture. In my view, the test of assimilation is whether people assimilate to the "hard" things – the features of American culture that require self-control or personal sacrifice for a common objective.

Graduate Question:

The National Academy of Sciences report draws on work from the CBO. Here are two assumptions in the CBO's work that I think are probably wrong: 1) The CBO uses a 2.5% discount rate for Social Security and Medicare expenditures (p. 358). For all other government expenditures, the CBO uses a discount rate of 1.7% for the period 2014 to 2039, and a 2.2% discount rate for 2039 and onward (p. 358). These discount rates are much too low. 2) The National Academy of Sciences report calculates estimates for three scenarios provided by the CBO. The CBO posits three alternative scenarios for government taxation and spending over the next 75 years. All three of these scenarios are unrealistically optimistic about the government's ability and willingness to get spending under control.

Here is the problem with the first assumption: The reason that the CBO uses the discount rates of 1.7%, 2.2% and 2.5% is because these are the rates at which the government can borrow money. That may seem reasonable at first glance, but it ignores that the purpose of this report is to calculate the net present value of immigrants' fiscal impact on society as a whole – not just the government. For practical purposes, most people have discount rates greater than 2.5%. For example, the stock market has an average return of 10%, and while investing in stocks is risky in the short term, it is much less risky over the long run. If we are interested in looking at immigration as a potential investment that is being considered by the American citizenry, we should use the discount rates that the typical American citizen would apply to any other investment.

Raising the discount rate would make the resulting calculations of the NPV of immigrants' fiscal impact much more positive. Since immigrants tend to be working age, they are net taxpayers in the short term, and only become net tax recipients much later. The higher

the discount rate, the more steeply immigrants' future receipts are discounted relative to their current contributions.

Here is the problem with the second assumption:

The CBO's three scenarios are (from p.436) A) No change to current legislation. Tax rates remain the same and benefits programs grow according to demographic trends as more people become eligible. B) The government adopts tax increases and spending cuts to get the deficit under control. C) Taxes and spending increase at the same rate as productivity growth thus keeping the US at a stable level of deficit to GDP/capita. This means that the deficit to GDP ratio would shrink as the population increases (for example through immigration).

All three of these scenarios are too optimistic. The National Academies report attempts to estimate the impact over the next 75 years. If the government continues to behave over the next 75 years in the way it has over the last 75 years, the deficit will grow much faster than in any of the three scenarios above. There is no reason to think that politicians have much more incentive to be fiscally responsible now than they have in the past. Moreover, the CBO report was written in 2014. For the purposes of scenario B, the CBO posited that the government would start reigning in the deficit in 2015. Now that we are in the year 2020, we know that the government has continued to increase the deficit even beyond the growth of programs that existed in 2014. For those reasons, all the CBO's scenarios, A, B, and C seriously underestimate the growth of the deficit.

The more likely scenario is that the government will default, meaning that it will not pay the full amount of the benefits that it has promised. If the government continues to act as it has in the past, this will almost certainly occur during the period for which the National Academies have calculated their estimates (the next 75 years).

The fact that the government will default means that the true net fiscal impact of immigrants is much higher than the National Academies' estimates. Immigrants will be required to pay taxes in the present, but they may not collect much, or any, of the project benefits because after the default the government will be unable to pay those benefits.