

ROUNDTABLE DISCUSSION ON IMMIGRATION

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JASON POTTS, ROBERT GREGORY and WADE E. MARTIN

I. INTRODUCTION

This article is based upon presentations at the closing session of the 14th International Conference of the Western Economic Association International (WEAI), hosted by the Newcastle Business School, University of Newcastle, Australia, January 11-14, 2018. The panellists are:

Orley Ashenfelter is the Joseph Douglas Green 1895 Professor of Economics at Princeton. He is a recipient of the IZA Prize in Labor Economics, the Mincer Award for Lifetime Achievement of the Society of Labor Economists, and the Karel Englis Medal awarded by the Academy of Sciences of the Czech Republic. Among the acknowledgements of his many contributions, he has served as president of the American Economic Association, the American Law and Economic Association, the Society of Labor Economists, the American Association of Wine Economists, and the WEAI. He also served as editor of the American Economic Review for 15 years, from 1985 to 2001.

Daniel L. McFadden holds the E. Morris Cox Chair at the University of California, Berkeley, and is Presidential Professor of Health Economics at the University of Southern California. He received the Nobel Prize in Economic Sciences in 2000 for developing economic theory and econometrics for discrete choice analysis. Among many honors, he holds the John Bates Clark Medal from the American Economic Association (AEA). He has served as President of the Econometric Society and the American Economic Association, and is currently President of Western Economic Association International (WEAI).

Abigail Payne is the Director of Public Economics Data Analysis Laboratory, the leading Australian institute on applied economic and social research. Her PhD is from Princeton University and her law degree is from Cornell. She is on the Editorial Board of *Economic Inquiry* a publication of WEAI.

Jason Potts is currently the Director of the Blockchain Innovation Hub, housed at RMIT University. He received his PhD (Economics) from Lincoln University, New Zealand. He is the author of *The New Evolutionary Microeconomics* as well as numerous academic publications.

Robert Gregory received his PhD from the London School of Economics. He is a past member of the Board of the Reserve Bank of Australia and the Australian Sciences and Technology Council. He is an elected Fellow of the Academy of Social Sciences and has been recipient of the Economic Society of Australia Distinguished Fellow Award, as well as holding the Chair in

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the Australian Studies at Harvard University. In 1996 Professor Gregory was awarded the Order of Australia Medal. He is a past President of the Economic Society of Australia and Editor of the *Economic Record*.

Wade Martin is Professor of Economics at California State University, Long Beach, and Executive Director of the Western Economic Association International. He served as editor of *Contemporary Economic Policy* from 2005 to 2011.

II. WADE MARTIN

Welcome to the final session of the conference. Our distinguished panel will discuss the economic, social and political dimensions of immigration, a topic that is in the headlines across the world. David Card was scheduled to contribute to this panel, however, due to a family emergency he wasn't able to join us. David did provide some information to help position the issues for the panel. Using the information provided by David, I will provide some context for the discussion on immigration. Following this introduction, each panel member will have approximately ten minutes to provide their perspective on the issues. We will then have 30 minutes for questions and answers.

Immigration is the focus of a variety of policy prescriptions in every country across the globe. The complexity of the topic results in very contentious debate given the diversity of opinions. Our distinguished panel today will provide insights that will help to frame the issues and inform these debates. Immigration is a challenging topic with multiple dimensions and perspectives. Figure 1 provides a stark example of one dimension of this topic, the refugee problem. This is an example of one type of immigration that we are examining. This is a refugee camp in Jordan for Syrian refugees. This photo clearly illustrates the impact of immigration and relocation.

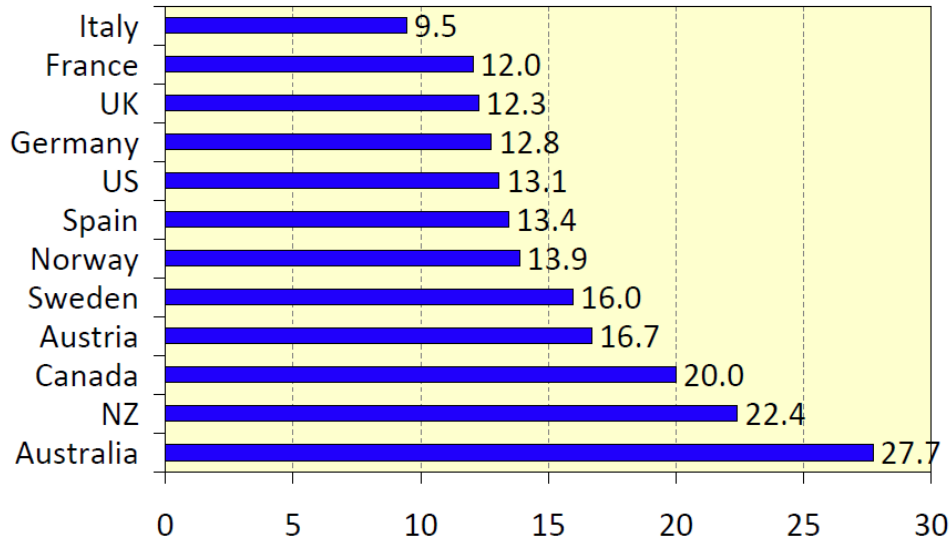
FIGURE1
Zaatari Refugee Camp for Syrian Refugees in Jordan, July 2013



Source: US Department of State

Figure 2 provides data on immigrants for a sample of Organisation for Economic Co-operation and Development (OECD) countries. Using data from 2013 you can see the percent of immigrants in each of the listed countries, with Italy at 9.5 percent and Australia at almost 28 percent. You can see Canada, New Zealand, Australia are between 20 and 30 percent immigrant population and the US at approximately 13 percent.

FIGURE 2
Percent of Immigrants



Source: David Card, 2018, with permission. Data Source: OECD 2013

Considering the United States data more closely (see Table 1). We compare population composition between 2000 and 2015. The total population in the US increased from 282 million to 320 million. Similar increases were experienced in the number of immigrants as well as unauthorized immigrants, depending on terminology. However, as a share of the immigrant population in the US the unauthorized component has declined from 27 percent to 25 percent.

TABLE 1
A Closer Look at the US Situation

	2000	2015
Total US Population (millions)	282	320
Number Immigrants (millions)	31	42
Number Unauthorized (millions)	8	11
Immigrant Share of Population (%)	11	14
Fraction Unauthorized (%)	27	25

Data Source: US Bureau of Labor Statistics, Current Population Survey, various years

Another important consideration is the source country of the immigrant population. Table 2 provides a comparison of the US and Canada. These two countries exhibit very different immigration patterns. In the US there has been significant immigration from South/Central America plus Mexico. Canada, on the other hand, attract immigrants from East and South Asia. There are also significant differences between the educational levels of the immigrants. Sixty

percent of the immigrants into Canada already have a Bachelor's degree, whereas for the US it is 35 percent.

TABLE 2
Top Source Countries for New Immigrants (mid-2000s)

	% of Immigrants	
	US	Canada
E. Asia (China, Korea, Japan)	9	20
S. Asia (India, Pakistan...)	9	20
S.E. Asia (Vietnam, Thailand...)	5	7
South/Central America (incl. Mexico)	49	7
Africa	6	13
Caribbean	5	3
Eastern Europe	6	10
Addendum: % with BA+	35	60

Source: Bonikowska et al (2011)

Table 3 provides data on the educational differences of immigrant populations. The difference between Hispanics immigrating to the US versus South East Asian immigrants is of particular interest. The stark difference in education level with more than half the Hispanic immigrants with a less than high school level and immigrants from SE Asia having already graduated from college.

TABLE 3
Importance of Education Differences

	Natives	All Immigrants	Hispanic	S.E. Asians
Dropouts	11	32	51	17
HS Graduate	30	22	27	16
Some College	31	19	13	18
BA or More	29	28	10	49
Including...Adv. Degree	11	12	3	21

Data Source: US Bureau of Labor Statistics, Current Population Survey, various years

Other characteristics of immigrants show the tendency to geographically cluster as well as clustering in certain sectors of the economy. Table 4 shows that 50 percent of immigrants in the US are located in Los Angeles, Miami, and Texas border towns. The tendency to geographically cluster is also evident in Sydney, Australia, Toronto, Canada and London, UK. There is also

evidence that immigrant populations cluster by sector of the economy. Agriculture and food processing attract 50 percent of immigrants in the US with 30 percent working in healthcare.

TABLE 4
Other Differences

Immigrants are geographically clustered:	
•	LA/Miami/Texas border: 50%+ immigrant
•	Rural areas/small towns: 2-5%
•	Similar in Sydney/Toronto/London: 50%+
Immigrants also clustered in sectors/jobs:	
•	Agriculture, food processing: 50%+ in US
•	Healthcare: 30% in US

Data Source: US Bureau of Labor Statistics, Current Population Survey, various years

Table 5 provides additional detail regarding the composition of the immigrant population. The data on age, participation in the workforce and mean annual earnings help to provide a more comprehensive picture of the immigrant population. Data are provided for natives and second generation immigrants as well. As the data show, the net contribution to the economy in terms of taxes paid versus transfers received is positive.

TABLE 5
Per Capita Transfers and Taxes – Mid-2000s (CPS)

	All	Immigrants	Natives (incl. 2 nd Gen)	Second Generation
Percent Age 16-65	66.5	83.0	64.2	43.5
Percent Working	52.8	63.1	51.4	33.6
Mean Annual Earns	20,390	22,486	20,101	13,161
Value of:				
Total Transfers	1,820	1,295	1,892	2,014
Total Taxes	6,117	6,047	6,127	4,145
In Kind Benefits:				
Medicare (%)	13.6	10.9	14.0	16.7
Medicaid (%)	11.3	10.3	11.5	16.0
Enrolled in K-12 (%)	17.7	8.0	19.0	27.9

Data Source: US Bureau of Labor Statistics, Current Population Survey, various years

These data provide a context and foundation for the discussion that follows. To begin the discussion please welcome Orley Ashenfelter.

III. ORLEY ASHENFELTER

I would like to begin my comments with a review of the way that economists normally analyze migration. I'd then like to show you that some of the data are consistent with the standard economic model, but some are not. Following that I will move to the very troubling photo that was put up, the picture of the Jordanian refugee camp (see Figure 1). I'll come back to that shortly.

I've always thought migration was a very difficult issue for economists to discuss because the first thing we like to think about is maximizing world income. Doing that of course means that people should move very, very freely from place to place. But of course there are many reasons why blockages are set up and it's clear that free movement is far from the norm across the world.

The economics of migration has a long history in labor economics and the guiding principle is that migration incentives result from comparing the financial benefits of moving against the costs. This is elaborated in the following way: consider the annual income difference for a person with certain characteristics as between where they are now and where they might consider moving. We may then ask, what's the discounted value of that income difference over the future working life of that person and how does that compare against the costs of moving?

There are some nuances to this question, of course, because the income or cost differences might be heterogeneous across workers with different characteristics. In other words, there could be a difference in wage rates between the US and China, as there is, but that difference no doubt varies with the characteristics of the people who are potentially movable.

A good example is a Chinese person with an economics PhD and a tenured position in the United States. Such a person will typically be paid more in China than they will be paid in the US, and there has been movement of these people to China from the US in recent years. On the other hand, the person who works in manufacturing is paid much less in China than in the US, and migration, when it is permitted to occur, is entirely in the opposite direction. So the insight from this analysis is that it's not equally probable that people with different characteristics will have an incentive to move.

There's a second insight from this analysis, which derives from the fact the discounted value of income differences depends on how long you have to work. One implication of this model, which goes back a long way and has been tested, is that older people are less likely to migrate than younger people. That is certainly true in the data we have. The evidence also suggests that older people would be predicted to migrate more than they actually do but, nevertheless, the basic prediction works.

At some fundamental level, this model, which certainly has something going for it in explaining economic migration, also clearly doesn't capture what must be a very large component of non-financial costs of migration to individuals.

My favorite example is the comparison of Puerto Rico, which has just gone through a hurricane disaster, and mainland United States. A lot of people don't know this but people who are from

American territories and commonwealths (which includes Guam, American Samoa, U.S. Virgin Islands, Puerto Rico), that is, anyone who lives as a citizen in one of those places can, without a passport, move straight to the U.S. They are treated exactly like American citizens once they arrive in one of the 50 United States. So there are no barriers to immigration from an American territory to the US proper.

The only barrier as an American is that you have to have housing. But other than that there are literally no barriers whatsoever. Despite that, the Puerto Rican worker who migrates to the US earns about \$600 a week, which comes to over \$30,000 a year. A Puerto Rican worker on the island makes about \$10,000 to \$15,000 a year. So there's a \$20,000 difference in pay between the person who stays in Puerto Rico and the person who migrates to the US. At a discount rate of 10 percent that's roughly \$200,000 for a young worker, and even at a discount rate of 20 percent, which might be appropriate given how high the interest rate on credit cards is, this is still \$100,000. That is the income perspective. It certainly does not cost \$100,000 or \$200,000 to move to the US. This example shows that migration is smaller than it should be based on economic incentives alone. There is less migration than you would think there would be. That is one point I am making.

The second point I want to make is about this picture (Figure 1). The most troubling aspect to immigration is really not at the economic level where immigrants take advantage of the opportunity to earn more. Of course, by doing that immigrants are increasing the world's income as well as their own. That is an interesting subject but right now we have a much bigger issue. That is the problem of refugees. These are people who are not pulled from their homelands, but pushed out of them.

Figure 1 shows a refugee camp, mostly Syrians, in Jordan. That is not the only camp there. These camps are run by the United Nations (UN) High Commission for Refugees which was started in 1950. It is the same commission that was started to relocate a million people after the devastation of the Second World War. It has just as much work to do today, if not more, than it had then.

Right now the UN High Commission has millions of people of interest to them; that is, not only refugees but people who are at risk and in whom they have a special interest. The total number of people at risk for 2015 was about 57 million people. This is a population that is far larger than the population of Australia. There are 57 million people at risk, of which about 15 million live in camps like this one. That is the human tragedy. We need to do something, other than keeping people in those camps, to solve the problem.

I think actually the probable solution is not what people think it is. I don't see how those 15 million people can move to the rest of the world despite the fact that, in a country like the US, although it would be a significant change in the population, it still would add less than 5 percent to the US total. Nevertheless, in today's political climate such large movements do not seem possible. I think what has to happen probably is a proposal that has been made by many others; turn these camps into actual cities where refugees become regular citizens. Needless to say, this is an extremely complex social problem as much as it is an economic problem. In any

event, if this kind of "push" migration is not handled with care we will continue to witness this massive human tragedy.

IV. DANIEL L. MCFADDEN

A major controversy in current economic and political opinion is whether opening the borders of the developed country to immigration by refugees is harmful to the national interests, and in particular harmful to poorly situated natives who may face competition for jobs. I would ask you to do the following thought experiment. Suppose that every city of any size in Australia had its own borders and own immigration control, so that if you wanted to work in Newcastle coming from Sydney, or from Brisbane, you would have to go through an immigration checkpoint, perhaps face a queue, perhaps not be admitted if quotas had been filled. Clearly, this would be disruptive and inefficient political intervention in economic activity.

On the other hand, consider a thought experiment in which Australia opened its borders and were inundated with 50 million immigrants over a few years. The current infrastructure is unprepared to handle this inflow, and it is difficult to imagine building it out to do so. Housing, schools, transportation, and health facilities would be overwhelmed. But while the short-term disruptions would be daunting, there is nothing in principle about a high rate of immigration into Australia that is economically detrimental. You can imagine that in 50 or 100 years, if Australia could successfully manage the water, energy, and other natural resources these immigrants require, it would be an even more prosperous place.

Now there are in the world some countries that actually have internal migration controls, China and Cuba being two examples. What you see in these places are severe economic inefficiencies. In China the economic incentives for internal migration are so strong that the internal migration controls have largely broken down, and the country is slowly adjusting its controls to regularize migration with high economic value to urban areas and industrial zones.

Cuba has not yet come to grips with the economic burden of internal migration controls. A decade ago I raised this issue with Fidel Castro, and his response was that Cuba is not China. But I think the lesson here is that economic assessment of the effect of immigration needs to start from the observation that just like other economic resources, it's better by and large to have free flow and open exchange than to have compartmentalized activity and rigid borders.

I will try to channel David Card on immigration, because I think his research on this topic is definitive in terms of the impact of immigration on an economy. I refer to his paper "The Impact of the Mariel Boatlift on the Miami Labor Market," published in 1990 in the *Industrial and Labor Relations Review* (Card 1990). The circumstances of the Mariel boatlift were this: In 1980 the government of Cuba allowed 125,000 people to sail to Miami in a private flotilla that departed from the Cuban port of Mariel. These refugees included a relatively high fraction of less skilled workers and a high fraction with low English skills. They also included some fraction of individuals released from jails and mental institutions in Cuba. About 45,000 of these refugees settled in Miami. That increased the Miami labor force by seven percent and its Cuban labor force by about 20 percent. Card examines the impact of these immigrants on the Miami labor market, and tracks the fortunes of these immigrants and their children.

The study shows clearly that the Mariel immigrants had very little negative impact, even among native low income minorities with similar work skills. There was initially some increase in unemployment rates in Miami for unskilled workers, but the evidence is that this was almost entirely due to high unemployment among the new immigrants themselves. The native unemployment rate, including previous waves of immigrants, were essentially unchanged. Further, after two years unemployment rates in Miami had returned to baseline levels. There was no significant fall in wages, even during the period when the labor pool increased sharply in Miami.

Overall, the picture that emerges is that when immigrants are relatively free to enter labor markets, they will migrate to where workers are needed. Then their earnings are sufficient to meet their own economic needs, and they generate enough economic activity so they do not displace domestic workers or impose a long-term drag on the local economy.

Immigrants do impose an initial added burden on public services, particularly if language is an issue and immigrant initial unemployment rates are high, but this burden regresses fairly rapidly to the baseline public service burden for natives of comparable education and skills. This does not mean that these immigrants necessarily pay their own way in terms of public services, but it does mean that the burden is not very much different from a native person with comparable skills. Therefore, while issues of cultural assimilation and the merits of diversity need to be addressed in discussions of immigration policy, economic impacts are not a reason to oppose policies that accommodate immigration.

V. ABIGAIL PAYNE

I am going to build off some of the slides that David Card created for this presentation and then I'm going to add my twist.

My twist to this conversation is that I'm looking at immigration through the lens of a public economist. I'm building off of Dan's comments concerning the impact of immigration on communities and the role that government policy plays.

Let's first start with one of the few surveys on attitudes towards immigrants. These questions are from the two waves of the European Social Survey: 2002 and 2014. Table 6 depicts the answers to questions on whether or not the respondent thinks it's better if everyone shares the same customs and traditions. Other questions on the survey captured views on immigration. Table 7 shows some questions asked on personal values such as should we accept more people from poor countries?

TABLE 6
European Social Survey Study

Indicator Questions for Wage/Tax Spillovers:

1. Do you agree/disagree that immigrants **lower wages**?

2. Do you agree/disagree that immigrants **harm the poor**?
3. Do you agree/disagree that immigrants **fill job shortages**?
4. Do you think that immigrants **take away jobs** from natives or **create new jobs**?
5. Do you think that immigrants **take out more** (in social benefits) **than they put in** (in taxes)?

Source: European Social Survey

TABLE 7
European Social Survey Study (2)

Indicator Questions for Compositional Spillovers

1. Do you agree/disagree it's better if everyone **shares the same customs and traditions**?
 2. Do you agree/disagree it's better if everyone **shares the same religion**?
 3. Do you agree/disagree it's better if everyone **shares the same language**?
 4. Do you think that immigrants **undermine or enrich the culture** of the country?
 5. Do you think a country should **stop immigration to reduce social tensions**?
-

Source: European Social Survey

Some of the takeaways from the European perspective are that the views towards immigration really depend on both the economic wealth of the country and the composition of the spill over effects for the country. You will see in Table 8 variation in each country in terms of its relative wealth and then how it perceives immigrants from wealthier or less wealthy countries. Overall, these surveys suggest a fairly negative attitude towards immigrants. We will highlight this through a couple of figures.

TABLE 8
European Social Survey Findings

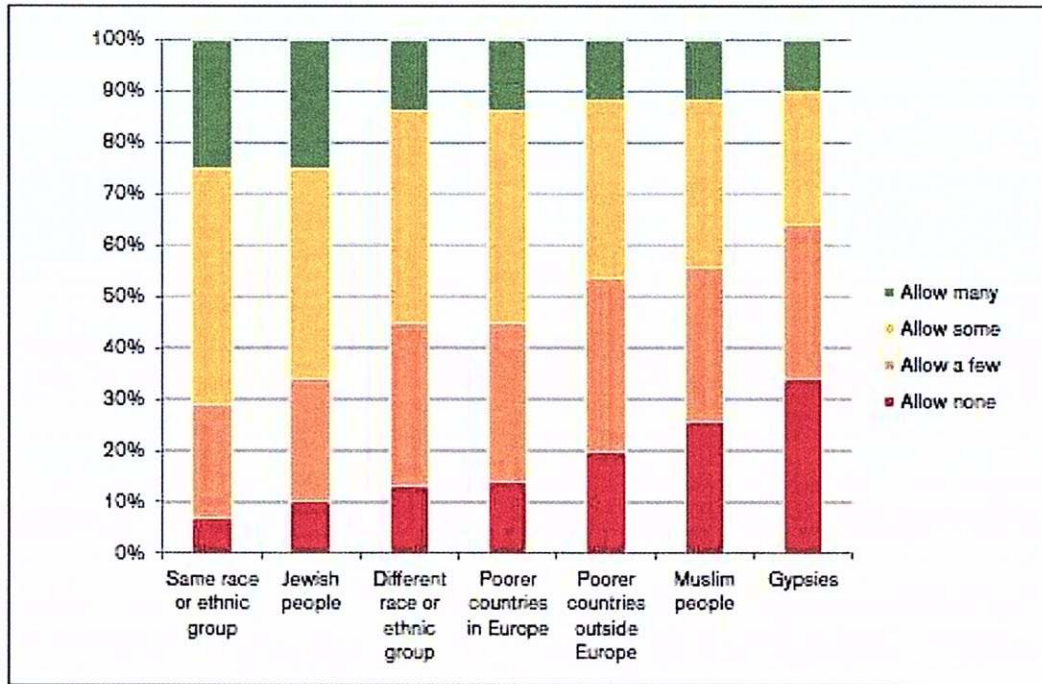
European views on immigration depend on both economic (20%) and composition (80% spillover effects).

Views about immigration policy (restrict or increase immigrant flows) are mainly driven by concerns about compositional spillovers.

Older, rural, and non-college grads are more concerned about compositional issues, and these concerns drive their more negative policy views.

Figure 3 depicts the results from a survey where red is a bad outcome, green is a good outcome in terms of if you think about immigration being a good outcome. What you'll see is that if you're going to allow immigration for people that look like me, the respondents are okay with it. If you're going to allow immigration for people who don't look like me the respondents have more negative opinions.

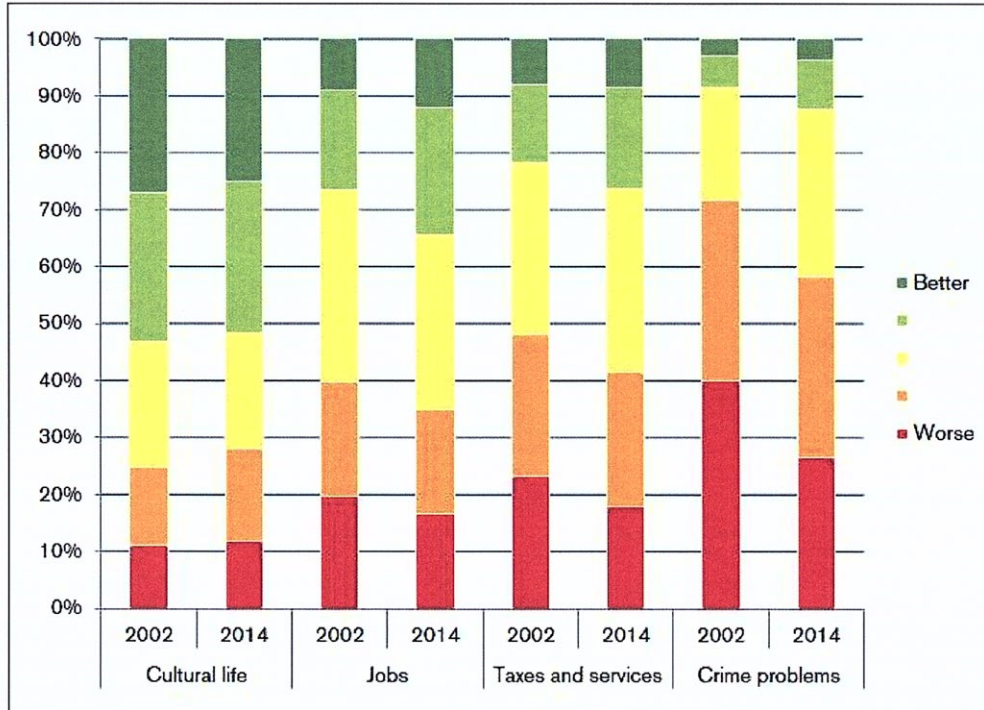
FIGURE 3
Attitudes towards different sorts of migrant in 2014



Source: European Social Survey Round 7, 2014 (all participating countries)
Analysis was conducted on the full sample of ESS respondents. Both design and population weights have been applied. Results exclude DK and refusal responses.

Figure 4 shows that part of what is driving opinion is how we think about immigrants and our attitudes about how immigrants add to our culture. In terms of cultural life you can see generally having more immigrants is a good thing, it adds to art, culture. I'm sure everyone in this audience enjoys going out to dinner and enjoying food from different ethnicities. Those are positive spill over effects of immigration. But as you move on to jobs it starts to get a little bit more negative. Taxes and services, a little bit more negative. Finally, increased perceptions that immigration results in greater crime. So in terms of thinking about the delivery of public services and what's needed, there's an overall negative spill over effect.

FIGURE 4
Perceptions of the effects of migration on cultural life, jobs, taxes and services, and crime in country in 2002 and 2014



Source: European Social Survey Round 1, 2002 and Round 7, 2014 (all countries participating in both rounds)
 Analysis was conducted on the full sample of ESS respondents. Both design and population weights have been applied. Results exclude DK and refusal responses.

What's interesting is that if you compare the opinions between 2002 and 2014 in each of these categories there's not much change in attitudes and perceptions even though the background and countries of the immigrants that were coming in the early 2000s are very different from the immigrants that are coming in 2014.

How do we put this into context? This is where public economics plays a role. One of the things, and this has been highlighted by both Orley and Dan, is that we tend to discuss immigration to a country is for the same reason. But the reason for immigration can range from being a refugee to entering under a skilled/higher education visa.

So why do we bring in a refugee? It's not really for an economic purpose. It's for humanitarian reasons. We think it's the right thing to do. But then if you move into the low skill migrant, for the low skill worker there's probably an element of a humanitarian perspective to it but then there's going to be some aspects of economic growth perspective. Finally, when you go to the high skill immigrant it's going to be what's driving that immigration from a country's perspective or a community's perspective is that it's going to help promote growth.

Now I happen to have spent over 20 years in Canada and then I moved to Australia two years ago. Both countries are similar in their immigration policies in that they favor high skill

immigrants. They favor increasing population because they believe that population growth is one of the drivers towards economic growth.

A final reason for immigration has to do with wealth and injecting financial capital into a country. In some countries, there are ways to buy your way into the country, if you're willing to invest enough in the countries. That is another dimension that we tend not to talk too much about. Is this type of immigration a good thing or a bad thing?

Considering Table 9, you want to think about the reasons for migrating by each type of immigrant. The result is you have population growth. Whether that population growth is from birth-rates, inter-state migration, or from immigration, we know what happens when you think about publically provided goods, it can be schools, it could be deterrence of crime, it can be roads, congestion, housing, etc. that are going to start creating congestion along different fronts. Governments have to decide how they are going to handle the increased demand for public goods and services when there is population growth (see Table 10).

TABLE 9
Context...Immigrant types

Reasons for Move	Type of Immigrant		
	Refugee	Low Skill	High Skill/Capital
Humanitarian	X	X	
Economic/Growth		X	XX

TABLE 10
Impacts on Communities/Public Goods

What happens to communities with increased population?
<ul style="list-style-type: none"> • Roads, Schools, Parks, Housing
What is the impact on decisions re: publicly provided goods/services?
<ul style="list-style-type: none"> • Government revenues <ul style="list-style-type: none"> ○ Economic v. non-economic oriented immigrants • Decisions by government <ul style="list-style-type: none"> ○ New immigrants and permanent residents do not have voting rights <ul style="list-style-type: none"> ▪ How does this affect political decisions? ○ Once voting rights conferred <ul style="list-style-type: none"> ▪ Increase in diversity of opinion (due to culture/background) <ul style="list-style-type: none"> • Can lead to divergence in opinions

The question is, as we are experiencing that congestion, do we blame that congestion on immigrants or do we blame it on overall population growth?

So, first of all an immigrant comes in, usually they come in under a visa. Under a visa they are going to have access to certain types of public services. They will have access to schools. Their

taxes will help pay for their schools. But they don't have, for instance in Australia, if you come in under a visa, if you want healthcare you are expected to purchase private healthcare insurance. Then at some point you move from that visa to the landed status or permanent residency status or green card status which entitles you to more of the public services. Then you are pretty much treated like a citizen, but what is different is you do not get to vote.

Let's consider public good provision from a politician's perspective. Let's pretend I'm a politician. I'm representing a community, I'm representing a State, half my constituency are natives who vote for me. The other half don't vote for me. What decisions do I make? How do I think about the delivery of public services? How do I think about what is going to get me re-elected? How do I react to the voter's sentiment?

There is a long history of literature dating back to 2002/2005 (e.g. work by Alesina and La Ferrara) that suggests that the more diverse a community is, the lower the level of public services that are provided. What drives this can be a lack of consensus among voters. This can be driven by a difference in opinions, backgrounds, or perspectives of how to treat those that look like you or do not look like you.

There's also research I've done on charitable giving. More diverse communities are observed giving less to charity than more homogeneous communities. What drives this finding? Is it cultural differences or is it attitudinal differences? Other researchers have undertaken experiments that use natural disaster incidents to measure a willingness to donate to others. The research suggests that subjects that are shown pictures of people that look like them are willing to give more than if they are shown pictures of people that look different from them.

A recent paper in *AEJ* by Daniel Jones and others study the effects of diversity in politicians on public good provision. Their analysis suggests a more diverse legislative body leads to lower levels of public good provision.

I think part of this immigration story is not just about who's coming in and how this affects labor markets and/or economic growth. Another important facet of immigration is the effects on public good provision and the decisions made about the level of services and goods to provide.

VI. JASON POTTS

Yes, I want to take a slightly different angle on this and just to pull back a little bit and look at the role of economists in trying to understand and contribute to solutions to what we'll call the immigration problem.

Now the immigration problem, in simple terms, is that it is a long run economic net good. That's one thing that we've spent a long time figuring out. But it's a political bad, or a cultural bad, and for all of the reasons that have been mentioned. And this is the basics of the conflict in this; an economic good, a political bad. That's the immigration problem.

The way in which economists have contributed to this problem is by doing all the work we've just described. So we've set it up as saying trade theory tells us why this is an economic good. Free

movement of any valuable factor of production, is good. Human beings are valuable factors of production therefore the default *a priori* position should be open borders, with control, but essentially a preference for free movement of goods. And that's what economic theory says.

Then we can back that up with evidence. So there's proof that it actually is this economic good and the work that David Card and many others has just documented painstakingly in enormous detail the extent to which theory supports this, evidence supports this. This is an economic good but still a political bad and a cultural bad.

So let's look at how economists have framed this. It's more or less trade theory, labor market theory and public goods theory. Let's frame it from that perspective. There's one angle we've missed and this is maybe an empirical question whether this is significant or not. My priors are that this is an important thing that economists have overlooked, is that immigration is also an information problem. We can use information economics to understand what's going on here. From an information perspective the problem that we've got is we're stuck in a market-for-lemons situation, that with missing information or information uncertainty or asymmetric information, what you end up with is a collapse to a Nash equilibrium where everyone assumes the worst about everyone else. And when we make policy based upon that assumption we shouldn't act surprised that the politics ends up being a lot harsher, a lot more anti-immigration, than the economics suggests that it should be.

So this will be my point, just to argue I think that if we can also introduce information economics into this story we can unpack the economics of immigration policy. The evidence of economists looking into this, for instance Bryan Caplan at George Mason University who argued that the problem is that most people aren't economists and therefore they easily fall for economic fallacies and so the average sentiment is usually both anti-free trade and anti-immigration (Caplan 2007). And so our role is to correct that with theory, with evidence, with teaching, with persuasion. So that's one major way that economists have contributed to resolving the immigration problem.

The other way that economists have contributed, in passing more than in practice, is things like Gary Becker's proposal for citizenship markets (Becker 2005). To say maybe we can use markets in this space. Maybe if we sell passports or citizenship we'll get a better allocation of people across countries.

And again theory suggests why that should work because his diagnosis was essentially to look at immigration and see that in its modern institutional political formulation, it's a quota system. Basic trade theory suggests that if we replace a quota system with a tariff system we should get welfare improvements that are equivalent to markets for citizenship, i.e. citizenship for sale. Becker proposed that and everyone just said that's fine in theory but it won't work as policy. So again, it's one of these things that works in economic theory, but it's a political non-starter, it fails the political market test.

The other things that have been done are things like unbundling the citizenship stack as Abigail was talking about so that maybe we don't need to sell citizenship as a full service. It can be

unbundled into a package of say residency but without voting rights, and again we can design institutions around particular bundles.

So that's two ways economists can contribute to solving the immigration problem: persuasion about economic trade theory, and new institutional design approaches.

The third approach I suggest is looking at immigration as an asymmetric information problem, and approaching asymmetric information problem in a very straightforward way. I front up at a border. I have to make claims about identity, health, criminal record, a whole bunch of attributes that I have, and I know these all to be true. But what we're dealing with is cheap talk. I have to prove that these things are true to someone who is sceptical against that. And anyone could make these claims.

So you end up with a situation where we arrive at a high hurdle to make those claims, which means that people who are speaking the truth are actually facing a very high hurdle that is costly to do that. We're kind of stuck in that situation. It's the reverse as well. So it's not only cheap talk situation in one direction. The State has a problem of inducing you to reveal the truth about things that you don't want to reveal. So maybe you have had a criminal background. How do I create a mechanism to induce you to reveal that information? So its asymmetric information problems on both sides and the consequence of those fundamental asymmetric information problems that have always been there is uncertainty that translates into political mistrust.

You end up with an equilibrium where you're trying to fill out a ledger of 'this person is a citizen, this person is not a citizen' and that ledger is full of uncertainty. Everyone in those pictures of the refugee camps that Orley showed us is an example of missing information or ambiguity about information or unverifiable information. So in one sense a lot of the immigration problems are equilibria of bad information.

Okay, so what type of solutions may we have? Diagnosing something as an asymmetric information problem suggests may be sort of costly signalling type mechanisms and maybe mechanism design can help us with this, and I'll walk through one way which I think could be true.

Another way is technology. So where I want to get to now is, I'm not a labor economist or public economist or immigration economist, I'm a blockchain economist basically. I work on new information technologies. And what's interesting about technologies like blockchain, which are very new, is that this is a technology for recording truthful information on a ledger.

Immigration is a problem of recording truthful information on a ledger. Nine years ago we didn't have a technology to do this. Now we do. And what I suggest as one of the next steps in possibly thinking through government solutions to immigration problems is government adoption of new technologies in this space for dealing with this.

One way this could work, and that is already in use, is decentralized identity protocols. So at the moment we have centralized identity protocols such as passports and driver's licenses. There's a registry somewhere in a government building and if your name is on it, and you've got a tick next to it, then you've got a passport or a driver's license. And people who don't have

citizenship, there's no ledger anywhere in the world that has a tick next to their name. That's how identity works with centralized ledgers: you just have to be from a country with good centralized ledgers.

Blockchain technology enables decentralized identity protocols. Instead of having a centralized ledger that you can point to and go there's my name, we can create identity by network validation in a vast network of all sorts of verifiable or cryptographically signed transactions. I can prove that the set of transactions, and some could be monetary transactions, some could be media transactions, and if I can prove that it was overwhelmingly statistically likely that I was the person who made one of those transactions, I can show identity.

And this notion of decentralized identity is starting to be developed. At the moment it's a new way of doing it but the beauty of it is that it doesn't rely on a centralized government registry. Anyone, if they can prove the validity and a network of transactions, can prove identity. So this is perfect for someone in a refugee camp. This is perfect for someone from a failed State.

So basically new identity technologies can help overcome information problems that are causing immigration problems. Once you've got identity technologies you can then tie those to education credentials and other sorts of claims about yourself which are also part of the immigration validation problem. Finland has started using this already. This is very new technology to solve this.

Another mechanism that we've developed (with Vijay Mohan) is what we're calling crypto-confessional (Mohan/Potts 2018). We built this as a way to solve the doping in sports problem where you want to create a mechanism to incentivise someone to reveal information they really don't want to reveal because the minute they reveal it they are banned. But you still want that information.

So how we deal with this currently is if you're an illegal immigrant and you're caught, you get punishment. The only information from illegal immigrants comes from the ones that get caught. But there's only one type of punishment, the same type of punishment for everyone. What our crypto confessional mechanism does is it sets up an incentive to provide true information, to write it to a blockchain and sign with a private key. You'll reveal exactly your criminal background, your skills, everything. You put the information in. Everyone can see the information. But no one can tell who put the information in. The transaction is public, but anonymous.

Now in such a world we can incentivise the honest revealing of information with two-tier punishment. If subsequently the State catches you as an illegal immigrant, you can use your private key to unlock the ledger and show that you've already revealed it: In that case you get a type-one punishment, say a fine. But if it turns out that we catch you and you haven't put that information in, then you get a type-two punishment, a worse punishment, say deportation. So to incentivise truthful revealing of information requires two levels of punishment. And the theory we've developed shows that basically you can tune the punishments to make it incentive compatible to reveal true information.

So the point of this is that we can use new institutional design mechanisms, cryptoeconomics and technologies, to actually resolve a number of these, or at least improve, a number of these information problems that can go toward solving the immigration problem. And I'll stop there with that notion.

VII. ROBERT GREGORY

Australian immigration research, to a large degree, is determined by the US research frontier. There are good reasons for this. Australian academics want to publish in the best places and the best places are US journals. Furthermore, US editors are more interested in research that is closely related to their perception of US immigration issues than in research which investigates special features of the Australian immigration landscape. Hence, most Australian research is not determined by local priorities. In the following comments I emphasize local issues that should be at the center of our research but because they are largely ignored in the US they are largely ignored here.

I focus on four potential research areas: the value of the binary division of the population into native and overseas born, labor market integration of immigrants, recent immigration policy changes in Australia and macro-outcomes of migration policy shifts.

A. Who is an Immigrant – the binary division of born in Australia or born overseas?

Who is an immigrant seems a straightforward question but it is not! US immigration literature, overwhelmingly, divides their analytical models into two groups of people; natives and immigrants, which seems sensible. An individual is either one or the other!

In Australia, however, thinking of the native-immigrant distinction in this binary way – immigrants in one box and natives in the other – is not so sensible. I illustrate this with an example.

In most countries, changes in migration policy are often thought of as flowing from changes in native attitudes towards future migration inflows and not at all from changes in resident migrant attitudes. In this regard, I believe there might be a fundamental difference between Australia and the US, which has been largely ignored.

One reason why there may be a significant difference between the two countries is that the migrant proportions of the population are very different. In Australia, twenty-eight percent of the population is born overseas. To focus on native attitudes alone therefore is to ignore almost one third of the population, almost all of which vote in national elections. In the US, the proportion of voters in a Presidential election who were born overseas is about 5 percent. In Australia, the proportion of voters in a national election that is overseas born is four to five times larger.

Furthermore, to focus on the migrant third of the Australian population is probably an understatement of the potential influence of migrants. Suppose, children are strongly influenced by their parents' heritage and social and political views, including attitudes towards immigration policy. If an individual is born here, but their parents are born overseas perhaps we should think of this individual as part immigrant, at least with respect to attitudes towards immigration policy changes. Obviously, an individual with a parent born overseas is not a "pure" immigrant but the

question is should they receive any weight in any analysis of immigration – should we think of them as half an immigrant, some smaller proportion of an immigrant, or just give them zero immigrant weight and think of them as a “pure” native.

Once the definition of an “immigrant” moves beyond place of birth it potentially encompasses half of the Australian population, since half of the Australian population is either born overseas, or has at least one parent born overseas. One half of the population is a large proportion!

Furthermore, suppose husbands and wives are influenced by each-other’s views. In Australia, there is a high rate of intermarriage between immigrants and non-immigrants. Perhaps another 10 to 15 percent of the population is in this category. So, when thinking of influence on immigration policy should the researcher give the spouse of an immigrant a *de facto* immigrant weight?

An attempt to account for immigrant and immigrant -related categories could increase the *de facto* immigrant share to 60 to 65 percent of the Australian population all of whom may have a view on immigration policy influenced by their own immigrant experience or that of their family.

So, it seems overly restrictive in Australia to think of the influence on immigration policy by focussing only on the native born. Perhaps we should give substantial weight to ‘immigrants’ more broadly defined, especially in a country where the immigrant share of the population is so high.

B. Immigrants and Labor market integration

The US immigrant literature, and especially the older literature, tended to emphasise how quickly immigrant earnings caught up with native earnings. More recently the focus has moved to whether immigrants depress native wages.

But these debates do not have much resonance here. In Australia, the average first generation immigrant is better qualified than the native born, and on average earns marginally more income. So the important question is not how quickly do immigrant earnings catch-up to native earnings, nor is it to what extent immigrants depress native wages. More interesting questions are how quickly do immigrants and their offspring drop down to native income levels or do immigrant income levels move ahead of native incomes as the period since arrival lengthens.

C. Where do Immigrants come from?

This is also an important distinction between the two countries. Now-a-days I like to say that “most immigrants to Australia come from Australia” which I think is an interesting way to begin an immigrant focused discussion. How can most of our immigrants come from Australia?

Half a century ago, most immigrants came to Australia by applying for a permanent visa while residing in their home country. Australia then decided whether to accept them or not. If the visa was granted the immigrant came. If not they did not come.

This is not the current practice. Today, most migrants initially come to Australia on a temporary visa (with work rights) which is fairly easily acquired. Then, after a while, they decide whether to

apply for a permanent visa, while in Australia, and then Australia decides whether to grant their application. To become a permanent resident has largely become a two-step process – first step is to arrive on a temporary visa, second step, after arrival and after some time has lapsed, is to apply for a permanent visa while in Australia.

Our recent policy has created two classes of immigrants – permanent visa immigrants (mainly apply on shore) and temporary visa immigrants (mainly apply off shore). So, in response to this new policy, immigrant status is now blurred and it is important to distinguish between those who hold permanent and those who hold non-permanent visas. Integrating this distinction into immigrant research requires an entirely different way of thinking about immigration than in the past.¹

This distinction between temporary and permanent visa holders is not a trivial issue (Gregory 2014). Today, the stock of foreign born on temporary visas with work rights is equivalent to about eight or nine years of permanent immigration inflows. This has many important implications.

Suppose, for example, the researcher is interested in the relationship between immigrant outcomes and period of residence. If the sample is immigrants who have been in Australia for ten years or less, then half of this stock is currently holding a non-permanent visa. This non-permanent group, with working rights, will include students, backpackers, and those on short term employment contracts. If the temporary and permanent resident visa groups behave differently in the labor market, as you would expect, then mapping the changing immigrant integration into the Australian economy, as the period since arrival lengthens must fully account for the changing mix between permanent and temporary status as the period since arrival lengthens. Likewise, measuring the degree of integration after the immigrant receives a permanent visa can lead to misleading conclusions as to how quickly immigrants settle in as the individual may have spent many years in the Australian labor market before receiving the permanent visa and this pre-permanent visa period may be missed.

Consider another issue. Economists often discuss how much the receiving country pays for immigrant integration into the economy and society. When visas are temporary, and there is no access to welfare programs, it is the immigrant who pays most of the integration costs.

For example, suppose an immigrant comes to Australia as a student, and then after four years on a student visa moves to 457 skilled migrant visa and then after two years on a 457 visa, receives a permanent visa. Suppose this individual arrives at 20 years of age. That means all the costs of getting that person to 20 years of age was paid in the home country. Then, the cost of moving the individual from 20 to 27 year of age in Australia is largely paid by the migrant. Perhaps they pay \$40,000 a year for a degree, three years at \$40,000 is \$120,000. Then there are living costs which are often paid for by capital they bring from home. That could be another \$40,000 a year. So a typical immigrant coming into the education system might bring to Australia one quarter of a million dollars or more over a three to four year period.

¹ The legal-illegal distinction is also a major difference between the US and Australia. Illegal immigration is very much a minor issue in Australia. Most illegal immigrants are short overstays from temporary visas.

Which immigrants can afford this? Only those who are well above average income in the sending country and who will probably become an above average income individual here. So, instead of Australia paying many of the immigrant integration costs, as it did under the old system, the new system has the immigrant paying for the integration costs. If the integration process is relatively successful, and the immigrant finds a high paying job, the move to a permanent visa is relatively easy. If not successful at job finding, the transition to a permanent visa is difficult and the immigrant is likely to return home. Australia therefore tends to grant permanent visas to the most successful in the labor market. So, compared to other EU and North American countries, we are quite special in terms of our selection of immigrants into permanent visa status. Large inflows of unskilled overseas born which dominate US policy discussions are not an issue here.

Many of the above features of the Australian immigrant landscape are obvious in every-day life. Our universities are now financially dependent on foreign students on temporary visas paying high foreign student fees. Many industries now depend on temporary visa immigrant labor, performing what used to be thought of as jobs for the unskilled. The increasing relationship between visas and the labor market came up in the wine session earlier in the conference where it was stated that immigrants are buying vineyards to obtain permanent visas through the business visa category and well qualified immigrants are working at harvesting grapes when they hold temporary visas, either as holiday makers or students. The important flow between temporary and permanent visas is largely ignored in immigration research in other countries but it is a key issue here.

For many Australian born who are unskilled their biggest threat to their jobs are not unskilled migrants but high skilled migrants who will become future accountants, bankers and lawyers but who are taking unskilled jobs, on temporary visas, as part of their way towards a permanent visa. The traditional US analysis would suggest that the bankers, lawyers and accountants who are overseas born bring in human capital, and they should increase jobs for the unskilled via complementarities in labor skills. This may be true after a number of years residing in Australia but is probably not true in the short run. In hotels, retail stores, restaurants, and virtually anywhere in the service sector, where there are low wage jobs, there may be few low skilled local born employees. Many of the individuals working in these low skilled jobs, however, will be high skilled migrants, working on temporary visas before moving to permanent visas.

D. What is the Australian overarching immigration policy issue?

At the policy level, immigration to Australia is thought of primarily as a population issue. The key questions that are usually posed are how large should the Australian population become and how quickly should the population grow? Naturally this discussion extends into economic and environmental issues and matters of social and political cohesion. Immigration is not often discussed in narrow micro terms of job competition between immigrants and native born, or in

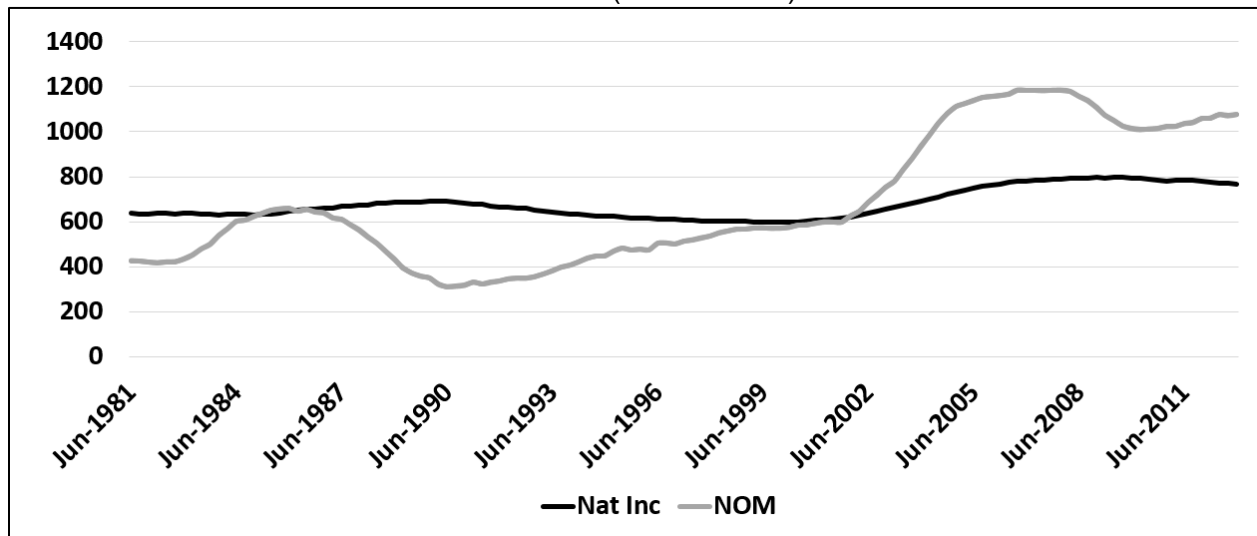
terms of immigrant impacts on native wages.² Of course, population size is an issue of interest to the immigrant and native born alike.

Since immigration policy is largely thought of as a population size policy, Australian analysis of immigration flows should raise different questions than those usually raised in North America.

One set of questions revolves around stability of policy attitudes towards immigration and population numbers. On the basis of past outcomes the evidence suggests that attitudes here are not very stable, despite the widespread acceptance that population size should be a stable long run objective. Furthermore, the new policy which separates permanent and non-permanent visas weakens control over immigrant net inflows and makes immigrant numbers much more volatile than in the past and therefore changes in population size are more volatile. I do not have time to discuss this in depth but let me show you some evidence.

Figure 5, presents the time series data on population change over the last four decades. The data are presented as five year moving averages and divided into natural increase (excess of births over deaths) and net overseas migration. The average natural increase over a five year period is just over 600,000 for most of the period but then, from around 2004 forward, the five yearly increase lifts to about 800,000.

FIGURE 5
Five Year Natural Increase (Nat Inc) and Net Overseas Migration (NOM)
1981-2017 (in thousands)



Data Source: Australian Bureau of Statistics. Australian Demographic Statistics, 3101.0
September 2017

² Of course this does not mean there is no interest in these questions it is just that they tend not to loom large on the immigrant policy discussion landscape.

The five yearly population increase attributable to net overseas arrivals is less stable and the historical relationship between these two sources of population increase has changed considerably.³ For the decade and half before 2005 the change in the natural increase of the population exceeded the net change in migration. After 2005, the relationship shifts and dramatically so, in response to a large jump in immigrant inflows, equivalent to just over one percent of the population each year. This lift in immigration inflows is an outcome of the new immigration regime which encourages immigrants to arrive on temporary visas and allows the growth of temporary visas to be determined by the private sector, subject to various government quality controls. Universities, for example, were able to offer places to overseas students on temporary visas and business was able to allocate temporary visas to skilled workers. Government kept some oversight but control of immigrant numbers on temporary visas was very loose.

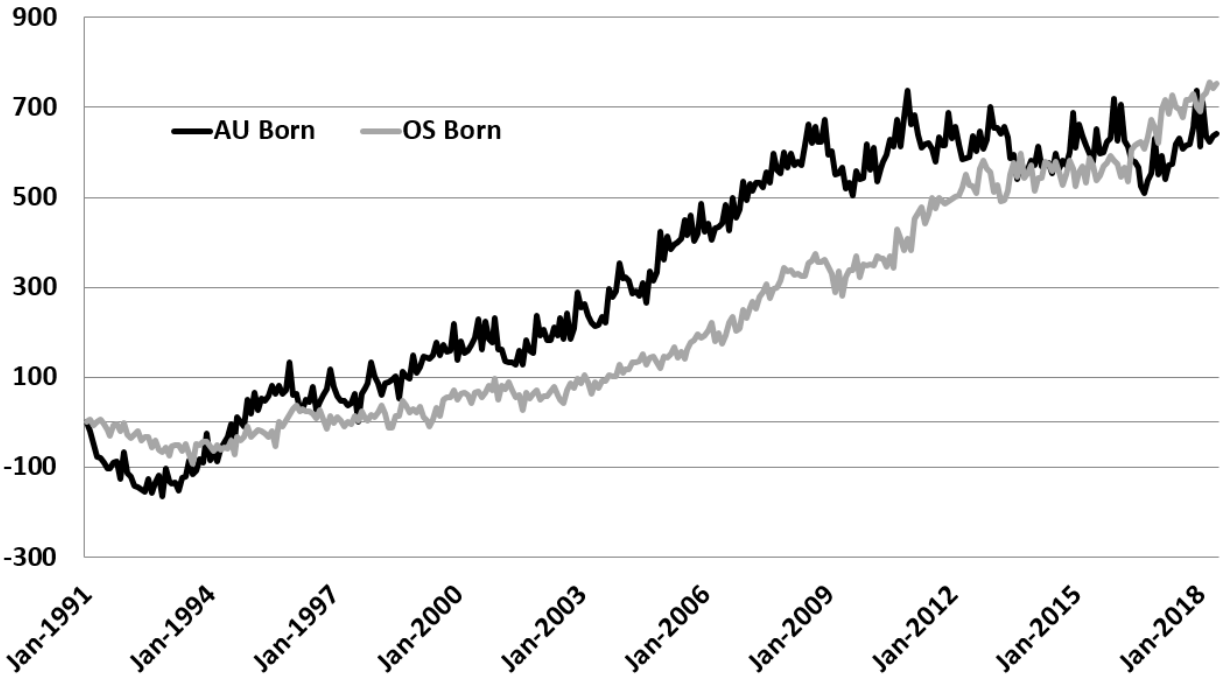
Over the last decade the lift in net overseas migration added between 1 and 1.2 million people each five years to the Australian population (around five percent of the population stock), with very significant implications for the construction of buildings, infrastructure, roads and schools. From the decade before 2000 it had been anticipated that into the future the population increase each five years from net immigration would have been around 600,000 and not the big lift to over one million. As a result, the infrastructure in Sydney and Melbourne, our two major cities where immigrants largely settle, has become increasingly inadequate. Indeed a decade and a half ago the Australian population had been projected to reach 25 million just before 2050. This number has been passed this year, thirty years earlier than expected, and the new projections suggest almost 40 million people living in Australia by 2050, a revision upwards of 60 percent.

In response to large net migration, government and all segments of the population at large, have become increasingly dissatisfied with the infrastructure lag in the cities and the growth of travel times and city congestion that these lags have generated. Australian immigration authorities therefore have begun to reduce the granting of permanent immigration visas, but, to this point, less permanent visas granted have been offset by a lengthening of temporary visa stays with the result that there has been no reduction in the increase in the rate of growth of the immigrant stock.

To emphasise, how important are the macro outcomes of changing immigration inflows consider Figure 6 which plots the growth in male full-time jobs over the last three decades.

FIGURE 6
Growth of Male Full-time Employment: Australian (AU) Born and Overseas (OS) Born
1991-2018 (in thousands)

³ These data do not exactly coincide with a native or overseas born classification but the approximation is very close.



Data Source: Australian Bureau of Statistics, Labour Force, Australia, LM5, 6291.0.55.001, May 2017

I take the number of male full-time jobs in each month and subtract the number of male full-time jobs as at January 1991 and plot separately the additional number of full-time jobs held by natives and overseas born. The first thing that strikes me about Figure 6 is the large change in the relationship between these two series.

For the first decade, June 1991 to January 2000 all full-time employment growth was filled by native born. Immigrant full-time employment levels were unchanging despite positive immigration growth rates.

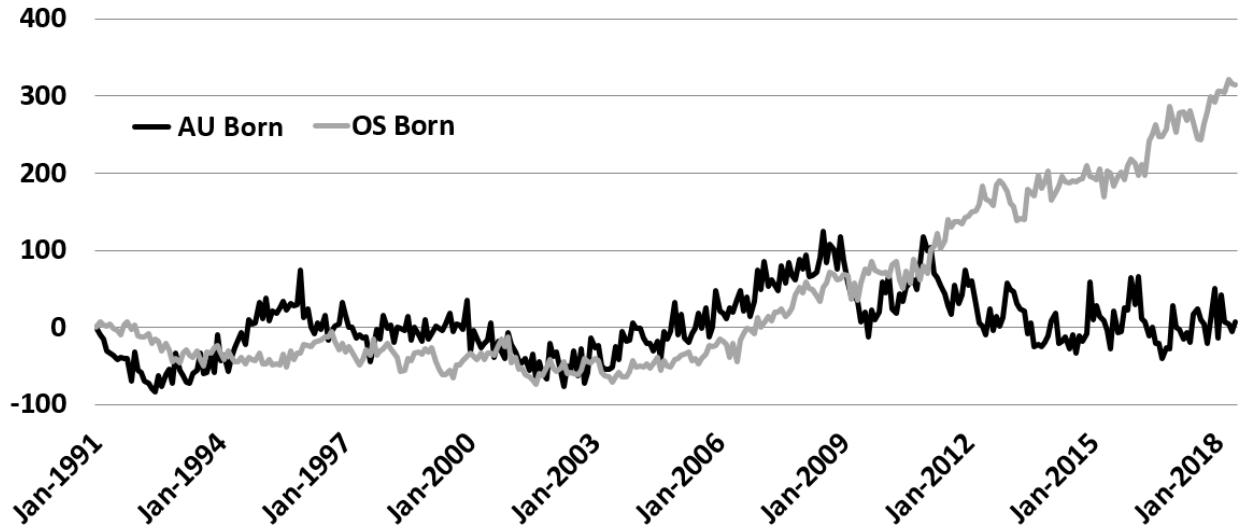
For the next decade, January 2001 to January 2010, the full-time job growth was shared fairly equally between the two groups.

But, over the last decade, 2008-2018, **all** the full-time job growth is allocated to immigrants. Since June 2008 full-time employment among immigrants has increased by almost 400,000. Among the native born there is no increase. This, is not so much an indication that immigrants are increasingly taking jobs from the native born but primarily a reflection of the shifting sources of population growth.

Of course, the immigrant inflow is disproportionately concentrated upon the young and the young are crucial for economic dynamism and economic growth. In this respect Figure 7 is particularly interesting. It presents, since 1991, overseas and Australian born male full-time job

growth for those 20 to 39 years of age. Until the GFC, both lines appeared indistinguishable and new full-time job growth was shared equally among the two groups. But since the GFC there has been a considerable change. The overseas born employment levels have continued to rise and those of the Australian born have fallen. The net result, over the three decades since 1991, is that all the full-time job growth in this age group has gone to the overseas born.

FIGURE 7
 Growth Full-time Jobs: Males, Australian (AU) Born and Overseas (OS) Born, 20-39 Year Olds
 1991-2018 (in thousands)



Data Source: Australian Bureau of Statistics, Labour Force, Australia, LM5, 6291.0.55.001, May 2017

This is a remarkable outcome. One wonders how much economic growth in aggregate, and per capita, would have slowed over the three decades if the immigration inflows had not provided this source of additional full-time young workers.⁴

To conclude where I began. There is a research downside to being a country on the periphery. The tendency in Australia is for the research community to duplicate US research and not respond to local issues. But the Australian research frontier should not be the US research frontier. Our differences stem largely from the very high quality of our immigrant inflows compared to the US and the very large immigrant share of our population.

QUESTIONS & ANSWERS

⁴ Similar job growth patterns are found among native and overseas born women who are employed full-time.

Question:

Chengfang Liu, Peking University in China: I enjoyed this panel a lot. So speaking of technology I was wondering what you think would be the impact of artificial intelligence on immigration. For example, in China in those industrial areas, there's observation that some factories replace workers with robots and there's even a discussion in China whether we should collect a tax on these robots. So I would like to hear your opinion. Thank you very much.

Answer:

Jason Potts: So there's two ways of looking at this. One is this whole sort of technology labor market, how will robots affect jobs sort of thing and I think the immigration side of that is just one aspect of a much broader thing because this is also happening inside economies as well in terms of labor capital substitution.

That one, this is sort of a hard one to try and figure out but what looks like is sort of shaping up in this space is there's not straight labor capital substitution, that the robots will take our jobs away and will substitute for low skilled labor. What seems to be happening is essentially new types of jobs in which people are working with machines, and the relevant skill space here is working with machines, to create increased productivity. So there's that whole question right. Immigration is one part of that story.

The other part that I also think is interesting is AI for screening. So immigration is basically a decision process where a bunch of information is presented to a thing that makes a decision and usually that thing is a person with a checklist going through, checking and verifying. You know, in the same way that medical diagnostics are like that.

So this potential of AI basically doing the screening I think is actually just as interesting because that could be a lot faster. And we see the same thing happening at borders with movement of goods and services and screening cargoes of whatever. The more that process can be sped up all sorts of resources can move across borders much more quickly, including humans in that respect. So I do think the screening aspect of this is just as significant.

Question:

James Roumasset, University of Hawaii: I guess this is a thought experiment for Dan. Suppose you knew that 80 percent of the people who wanted to immigrate to the US would increase the welfare of current residents and 20 percent would make it worse. But prohibition would be ineffective for two reasons. First of all, we keep out most of the 80 percent. Second of all, prohibition is difficult to enforce because you're increasing the wedge between US and foreign wages and thereby incentivizing more and more innovative attempts at evasion.

So wouldn't it follow that the optimal policy would be "high-fence/wide-gate"? That gives you more effective border security (by whatever enforcement technology) and a better selection system for legal immigrants (e.g. Canada's point system). Does the high-fence/wide-gate metaphor (better enforcement and more legal immigration) make sense?

Answers:

Robert Gregory: To go back to this tension between the economic literature and Australian immigration outcomes. I am not sure that the income of a current immigrant to Australia will increase substantially over their life time, relative to their counterfactual income if they had stayed in their home country. In the US literature the overwhelming impression is that the relative income gap for the potential immigrant is very large. As a result, it is usual to conjecture that world welfare and income levels would increase a lot if there were more immigrant flows to the US.

But our current immigrants would probably earn well above average income back home and marginally above average income here and the income gap between the two counterfactual life-time incomes - one associated with migration and one associated with staying at home - may not be that large. I am focussing on the last decade when increasingly our immigrants are potentially very high income earners in their home country. And although looking ahead and guessing about average income growth over the life-time of current immigrants is clearly a wild guess I would argue that the evidence for my proposition seems very clear. Consider for example, those who come to Australia in the first instance as students. This immigrant group needs to have considerable sums of money to pay for their education. To access these sums of money they have to come from well-to-do families whose children you would expect to earn high incomes. Most of our current PhD students from China who accept employment in Australia are probably giving up a job back home that will pay them more, in real terms, over their life-time. So, for us, the traditional model, which emphasises a large income gap between what could be earned at home and what could be earned in Australia is increasingly not the best model. The reasons for immigration now go well beyond a simple calculation of income gaps.

It seems to me that the typical US immigrant economic model is still thinking about “send us your huddled masses” as it were. The US takes the low paid from Mexico, South America, and other countries where immigrants clearly gain a lot of income by moving to the US.

Jason Potts: But I would see that issue as being much more focussed on things like occupational licensing or essentially the way in which people can move certifications between countries because often when you’ve got a high skilled person in one country immigrating in, the main barrier they face is that their qualification isn’t recognized.

Robert Gregory: That’s true. That is an issue. How large it is in the overall situation I am not sure.

Jason Potts: Yes, and so maybe that’s the one we need to investigate in the sense of a kind of well now you have to prove yourself or we suspend judgement. At the moment what we do is just make you resit all the exams which usually basically adds another \$100,000 and three years to the time line.

Robert Gregory: My guess is that the student will do better by coming young and investing in their qualification here than getting the qualification back home and then coming. But, for the Chinese at least, after becoming qualified in Australia, it is not at all clear to me that staying here, rather than going home, will generate more life-time income for them. I know little about

immigration from India, which is currently near to our largest inflow group, but I suspect similar considerations apply.

Daniel McFadden: One thing to keep in mind is that if an economy uses a resource that faces import barriers, an obvious response is to export complementary resources. So if there are barriers to immigration as a response to the incentives of factor price equalization, this should encourage reverse migration of physical and knowledge capital, particularly technology and entrepreneurial skills, to locations with lower relative wages.

Orley suggests that the way to deal with the worst of the world's refugee problems is to facilitate resource flows to the refugees' current locations. This makes economic sense. However, suppose you go to the Gaza Strip or to the camps in Jordan, and say "You and your children are going to live here a long time. Let's start building schools and factories, and provide you with infrastructure." The response is likely to be "We will resist steps that make this refugee camp permanent. We're not giving up on returning to our homeland." I don't believe there is an economic solution to this impasse.

Question:

Morris Altman, Newcastle Business School, University of Newcastle: Just two general questions, one with regards to Australia, you run a counterfactual with the immigrations that we have coming into Australia have increased the unemployment rate amongst those groups that the immigrants, even though higher human capital immigrants, have on your economy. So you have a bunch of people who are more highly educated, they're going to go into a certain job pool or job market. Have they actually increased counterfactually the unemployment rate amongst that sub-set of individuals?

Just another very quick question, Arthur Lewis, a long time ago wrote that he understood why workers in the United States feared immigrants, and that was in the 1910's, because he argued they could smash the labor market. But I'm wondering, how do institutions fit into this? In other words, if it's easy to unionise or if you have strong minimum wage legislation, how would that impact on the story of unemployment and on wages?

Answers:

Robert Gregory: Yes institutions do matter and Australian institutions make it easy for immigrant to do well. But the relevant macro counterfactual in my mind is that if Australia increases immigrant flows by 100,000 what does that do to aggregate job growth at the macro level? People fight over the answer to this question. Perhaps an additional 100,000 immigrants create more jobs than they take. After all they need houses, infrastructure and create demand in all sorts of ways. But one of the reasons I think people fight over the immigrant job multiplier is that it's much of a muchness – that is, the employment effects of additional immigrants well may be neutral, even in the short run. I'm on the side, however, which judges, in general, that immigration is a positive macro force in the short run, even though the Australian government often thinks the opposite, which is why when the unemployment rate begins to increase they cut back on immigrant inflows.

The reason I think of immigration as a positive force is that if Australia receives an extra million people they have to live somewhere – adding to housing demand – they have to buy furniture, spend money to travel to work, and generally spend money across the board and add to demand. It is probably in my view that the demand effects are at least equal to the supply effects.

So, in my opinion, one of the reasons why Australia, missed the very adverse effects of the GFC was the strong immigrant inflow. The Australian current housing boom, and all the job creation associated with that, is being generated by two forces; one is a worldwide influence of low interest rates, and the other is that Australia has more people than expected and therefore needs more houses than expected. So, for Australia, I judge that the immigration inflows have been a positive macro-economic force. If we had cut immigration in 2007 I think our growth over the last decade, per capita, would have been lower. But then that's a very contestable statement I suppose. But that's my best judgement.

Orley Ashenfelter: I think your question is if there's increased labor supply and wages are inflexible doesn't that mean there will be more unemployment? And taken at face value, given your assumptions, I think, there is some potential for increased unemployment from immigration. But what actually happens depends on where you are geographically. If we take the US as an example, the vast majority of low wage workers are not paid at the minimum wage. They are paid above it. So instead of this increase in labor supply having an effect on unemployment it would probably have an effect on wage rates. How much is a question that depends on the elasticity of demand. Most people think elasticities are large enough that immigration effects are not large.

The second point is that even when there are effective minimum wages it's rarely the case that there's full coverage. So, for example, shopkeepers set up shops that have long hours, people work long hours, but they're self-employed and that's a way around a binding minimum wage. And of course there's the third way, which is people who work off the books. That in the US is extremely common and I'd be shocked if it didn't happen in Australia too. So in a way unemployment is not the problem, it's more that there could be, there may not be, but there could be, downward pressure on wage rates depending on what skill group these immigrants are from.

Let me make one other comment about Dan's comment. You saw the picture of the refugee camp. That's not a new refugee camp. I think realistically these refugee camps are already cities and those people are not going home. So the real issue is are you going to pretend that they're going home, which is what everybody wants to do, or are you going to start acting as if this was a problem that has to be solved on a broader basis.

Because these people are having children, I mean an entire generation of people are growing up, over 10 million people, in refugee camps around the world. They have to have some way to get out eventually, presumably. They can have their own mobility. I think it just isn't realistic to think that they're going back to their places of origin. It's a sad story but it's an aspect of immigration that economists are not very well equipped to deal with.

On the other hand we have dealt with it before after World War II and I don't really know that there's been much research on what happened. I'm thinking here of an analysis of the UN High Command in 1950. Somehow we dealt with all of the millions of refugees back then. Hopefully this is not a permanent problem. Anyway I just wanted to remark about that. I'm not as optimistic that we are ever going to have a solution that's going to permit these people to return home.

Question:

Valentin Zelenyuk, University of Queensland: Thank you very much for very interesting views and discussion. I have a question maybe to all but mainly for Dan McFadden and maybe also for Orley Ashenfelter.

Dan, you mentioned this famous study by the David Card about Miami immigration, natural experiment done by basically the former Cuban president. This is a wonderful paper by the way, but you know that recently the debate re-emerged about the accuracy of the results in that paper by several people and most notably by George Borjas (Borjas 2016). His NBER papers, I think two at least, where there is an argument that there is some mismatching of the skills that were compared in that original paper. And then there are a few other papers. So the debate re-emerged.

So I wonder what your opinion on that is and how that maybe relates to the also more recent re-emergence of the general debate on immigration and the Trump campaign and the actions of the government currently in the United States. Thank you.

Answers:

Daniel McFadden: My reading of the exchanges between Borjas and Card is that while questions remain on the depth and duration of impacts, Card's overall conclusion holds up that after a few years an immigrant labor force largely creates its own jobs and pays its own way. This is not a zero-sum game between immigrant workers and native workers. In most cases, I think barring immigrant workers is inferior to an economic policy of facilitating integration of immigrant workers and providing temporary support to displaced domestic workers as they adjust. Let me turn things over to Orley since you addressed the question to the two of us.

Orley Ashenfelter: One of the strangest things about Trump and immigration, and I'd encourage you to look at this, is that the immigration from Mexico is actually negative now. We don't have people coming. We have more going away than coming in. It's never been true that most Mexican migrants wanted to stay in the US. They wanted to earn a substantial living and then go back home.

One place where you can see this very effectively is on a website set up by a colleague of mine in the Sociology Department at Princeton, Douglas Massey. It has been a 35 year project. It's called MMP, Mexican Migration Project. I often recommend his web site to students and others, either to write papers or to better inform themselves of the facts.

Doug speaks Spanish and he works with Spanish speaking colleagues in Mexico. What they have done is to set up posts throughout Mexico to keep track of the migration from Mexico to the US, and in both directions. Mexicans migrating from the US are not a legal issue in Mexico, nor is Mexican migration to Mexico. So the sensitivity of questions about migration is much reduced.

He has a remarkable video that you can watch basically showing people moving, showing how in the 1970's it was a massive migration from Mexico into California. That then comes to an end and different parts of the border get used for migration. But actually now it's the other way round.

So it's kind of ironic. And perhaps it is true in general that myths create a conventional wisdom that creates public policy long after that public policy is no longer relevant. Trump's policies are an example of that. He's capitalised on something which, if you were going to be concerned about it, you should have been concerned about it 20 years ago.

And now the second question is about the Mariel boatlift paper. There's always been a concern about that paper by the way. Others have mentioned, and this is not very complicated, if labor supply is very elastic to an area then adding labor to it will not decrease wages by much. So let's say we have an area and the labor market is in equilibrium. Everyone moves around within this labor market. There's some aggregate demand and there's some aggregate supply. The demand and supply sets a wage and then everybody is perfectly elastically supplied at that wage.

Say, for example, the market is really Florida, well then dumping the number of people who came into Miami in the Mariel Boatlift into the Florida labor market would have an effect on the wage rate in Florida but it would be much, much smaller than if there were no migration between Miami and the rest of Florida. So there's always been this question of whether you should really expect much of an effect. If there's substantial migration, if labor supply is very elastic, the Mariel boatlift is not a very big effect on the US economy. So that's an issue. Larry Katz I think first brought that up, but it's classic labor economics. It depends on whether you think there is mobility.

Now it turns out inside the US, mobility actually has declined. If you look at anything related to cross-regional mobility you will find it has declined continuously for the last 40 years. So there's more concern actually now I think about what the Mariel Boatlift would do than then. And then there's the second issue about this.

There's a second issue though which is the actual empirical analysis itself and I've not followed the details of the various papers commenting on this.

Let me just make one further comment. The Mariel Boatlift is one example of a natural experiment. It's really a horrific one in some ways. But there are others. For example, in California there's the end of the Bracero Program which basically shut down migration. So it's the reverse. Instead of people coming in, it reduced the number coming in.

And there are a number of other examples that I think probably deserve study. So the fixation on one example always bothers me. These other examples seem like they would be worth studying in order to gather enough cases so that we could make a broader conclusion. As to the particular question you asked, maybe Dan here knows more about it but I haven't tried to follow it.

Daniel McFadden: I have quite a bit of contact and experience with the construction and agriculture labor markets in California, which essentially function using Mexican labor. Many in this workforce lack complete documentation. Traditionally, these workers took December and January off and went to Mexico for holiday to visit their families. While this wasn't as simple as booking a flight on an airline, there were established routes across the border that these workers would use for their holiday travel.

In the last few years this easy but unofficial border crossing has been shut down, trapping these workers in California unless they choose to leave permanently. I point this out because I think that when we talk about what's happening to the number of illegal immigrants coming in, how often are they caught and so forth, what's not being tracked is the back and forth of re-immigration. It's quite important to account for that and its effects.

Robert Gregory: Yes. I want to comment on that too. I began to become interested in immigration maybe five or six years ago when it was obvious to me that the current immigration inflows would probably prove to be unsustainable politically, or at least immigration would move to the front of the political agenda. One of the things I found really disappointing, as I read the immigrant literature, is that most of the literature is based on the analysis of stocks. Analysts take the census, or a large survey, to analyse what is happening to the immigrants who live in the country. There's hardly anything on the flows – that is how does a change in immigration flows impact on the macro economy. It is not that the flows are completely ignored, and the more modern literature tends to be more interested in inflows (see the Mariel boat lift for example). It is just that it is the outcomes for the stock of immigrant that have attracted most attention rather than changing composition of immigrant inflows and outflows and how they impact on the economy and how they have been changing over time..

Integrating the inflow and stock data in any analysis should be easy in the sense that all the data exists within government. But it's really hard to get it out. So, partly as a result, you kind of get the same situation that Orley is stressing, which is important. Everybody can be worried about immigration flows but the worry is really being generated by changing attitudes towards the stocks of immigrants rather than the flows. In fact the size of an immigrant group can be declining the same time the political forces, focussing on the stocks, become increasingly worried about immigration and attempt to restrict inflows.

We have an interesting stock-flow issue in Australia with New Zealanders. New Zealanders can come and go with very few restrictions. Australia can be tightening up in one area of immigration and have it completely offset — in terms of changes in the stock of overseas born in Australia — because New Zealand inflows increase or New Zealand outflows reduce. We can have New Zealanders going back home to and reducing the stock of overseas

workers, while other immigrant inflows, subject to visas, are increasing. So focussing on the flows, as well as the stocks, is important. And flows are under-emphasized.

The other point I want to make is that the analytical issues surrounding the Mariel boatlift paper – local labor market responses to outside generated shocks - has suddenly become a big topic outside of the immigration area. For those interested in international trade you may have picked up on the Autor, Dorn and Hanson, paper on the impact of Chinese imports on US regional labor markets (Autor 2013). One of their major findings is the shock of increased Chinese imports, reducing local employment, does not appear to significantly reduce the local population even though there is substantial job loss. There does not appear to be an increase in population outflows. They also seem to indicate very minimal wage adjustments to the shock – most of the impact is felt in the reduced stock of jobs.

And so this question about how the outflows and inflows of immigrants vary as the economy changes is becoming increasingly interesting. How many temporary or permanent immigrants leave when economic conditions in Australia deteriorate may be just as important as how many immigrant inflow. So the boatlift story, and the issues it addresses, is coming back strongly in the context of trade shocks.

Orley Ashenfelter: There's one more comment about this Trump business. There is a kind of a tragic problem and I don't know how the congress is going to resolve it. There are 800,000 people documented in the US who were brought by their parents when they were minors. So they were not people who themselves chose to move. They are an odd example of push migration, as are refugees. These young people weren't working; they were children. They're now grown up. Some people call them dreamers. I just say they're really Americans. They weren't born in the US. They were brought by their parents. And they are now in a kind of a state of limbo and I don't know what will happen to them.

It's a kind of a political tragedy. It seems there should be some permanent solution where these people have a path to citizenship.

And Dan's point is absolutely correct. It is still common for people with documentation to move back and forth across the Mexican border. But it used to be common that people who were undocumented would do so also. But now the situation is if you depart you really are at great risk regarding whether you can get back into the US. And of course the source of the problem is just this vast difference in wage rates across the border.

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ROUNDTABLE DISCUSSION ON IMMIGRATION

ORLEY ASHENFELTER, DANIEL L. MCFADDEN, ABIGAIL PAYNE,
JASON POTTS, ROBERT GREGORY and WADE E. MARTIN

I. INTRODUCTION

This article is based upon presentations at the closing session of the 14th International Conference of the Western Economic Association International (WEAI), hosted by the Newcastle Business School, University of Newcastle, Australia, January 11-14, 2018. The panellists are:

Orley Ashenfelter is the Joseph Douglas Green 1895 Professor of Economics at Princeton. He is a recipient of the IZA Prize in Labor Economics, the Mincer Award for Lifetime Achievement of the Society of Labor Economists, and the Karel Englis Medal awarded by the Academy of Sciences of the Czech Republic. Among the acknowledgements of his many contributions, he has served as president of the American Economic Association, the American Law and Economic Association, the Society of Labor Economists, the American Association of Wine Economists, and the WEAI. He also served as editor of the American Economic Review for 15 years, from 1985 to 2001.

Daniel L. McFadden holds the E. Morris Cox Chair at the University of California, Berkeley, and is Presidential Professor of Health Economics at the University of Southern California. He received the Nobel Prize in Economic Sciences in 2000 for developing economic theory and econometrics for discrete choice analysis. Among many honors, he holds the John Bates Clark Medal from the American Economic Association (AEA). He has served as President of the Econometric Society and the American Economic Association, and is currently President of Western Economic Association International (WEAI).

Abigail Payne is the Director of Public Economics Data Analysis Laboratory, the leading Australian institute on applied economic and social research. Her PhD is from Princeton University and her law degree is from Cornell. She is on the Editorial Board of *Economic Inquiry* a publication of WEAI.

Jason Potts is currently the Director of the Blockchain Innovation Hub, housed at RMIT University. He received his PhD (Economics) from Lincoln University, New Zealand. He is the author of *The New Evolutionary Microeconomics* as well as numerous academic publications.

Robert Gregory received his PhD from the London School of Economics. He is a past member of the Board of the Reserve Bank of Australia and the Australian Sciences and Technology Council. He is an elected Fellow of the Academy of Social Sciences and has been recipient of the Economic Society of Australia Distinguished Fellow Award, as well as holding the Chair in the Australian Studies at Harvard University. In 1996 Professor Gregory was awarded the Order of Australia Medal. He is a past President of the Economic Society of Australia and Editor of the *Economic Record*.

Wade Martin is Professor of Economics at California State University, Long Beach, and Executive Director of the Western Economic Association International. He served as editor of *Contemporary Economic Policy* from 2005 to 2011.

II. WADE MARTIN

Welcome to the final session of the conference. Our distinguished panel will discuss the economic, social and political dimensions of immigration, a topic that is in the headlines across the world. David Card was scheduled to contribute to this panel, however, due to a family emergency he wasn't able to join us. David did provide some information to help position the issues for the panel. Using the information provided by David, I will provide some context for the discussion on immigration. Following this introduction, each panel member will have approximately ten minutes to provide their perspective on the issues. We will then have 30 minutes for questions and answers.

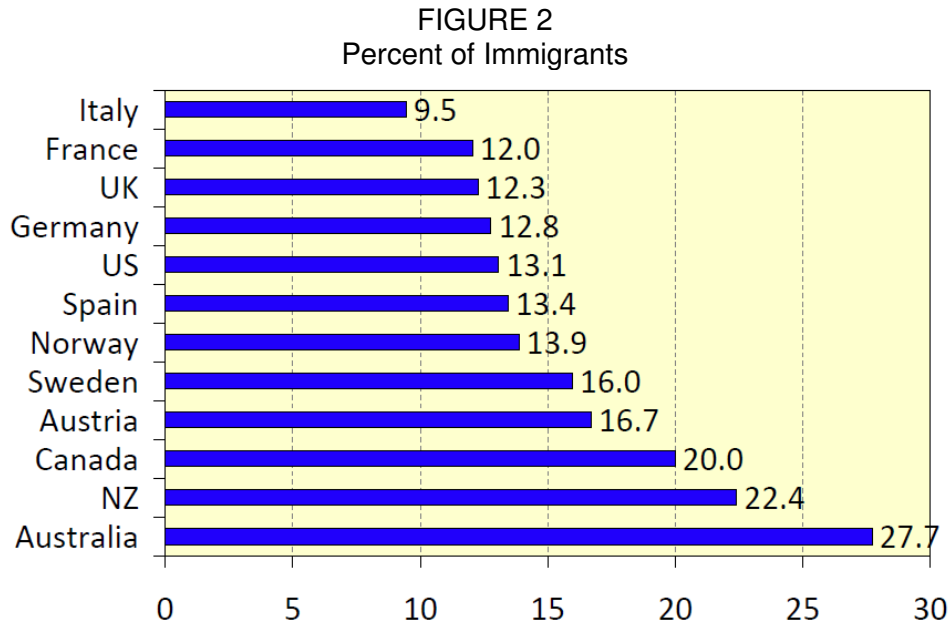
Immigration is the focus of a variety of policy prescriptions in every country across the globe. The complexity of the topic results in very contentious debate given the diversity of opinions. Our distinguished panel today will provide insights that will help to frame the issues and inform these debates. Immigration is a challenging topic with multiple dimensions and perspectives. Figure 1 provides a stark example of one dimension of this topic, the refugee problem. This is an example of one type of immigration that we are examining. This is a refugee camp in Jordan for Syrian refugees. This photo clearly illustrates the impact of immigration and relocation.

FIGURE1
Zaatari Refugee Camp for Syrian Refugees in Jordan, July 2013



Source: US Department of State

Figure 2 provides data on immigrants for a sample of Organisation for Economic Co-operation and Development (OECD) countries. Using data from 2013 you can see the percent of immigrants in each of the listed countries, with Italy at 9.5 percent and Australia at almost 28 percent. You can see Canada, New Zealand, Australia are between 20 and 30 percent immigrant population and the US at approximately 13 percent.



Source: David Card, 2018, with permission. *Data Source:* OECD 2013

Considering the United States data more closely (see Table 1). We compare population composition between 2000 and 2015. The total population in the US increased from 282 million to 320 million. Similar increases were experienced in the number of immigrants as well as unauthorised immigrants, depending on terminology. However, as a share of the immigrant population in the US the unauthorized component has declined from 27 percent to 25 percent.

TABLE 1
A Closer Look at the US Situation

	2000	2015
Total US Population (millions)	282	320
Number Immigrants (millions)	31	42
Number Unauthorized (millions)	8	11
Immigrant Share of Population (%)	11	14
Fraction Unauthorized (%)	27	25

Data Source: US Bureau of Labor Statistics, Current Population Survey, various years

Another important consideration is the source country of the immigrant population. Table 2 provides a comparison of the US and Canada. These two countries exhibit very different immigration patterns. In the US there has been significant immigration from South/Central

America plus Mexico. Canada, on the other hand, attract immigrants from East and South Asia. There are also significant differences between the educational levels of the immigrants. Sixty percent of the immigrants into Canada already have a Bachelor's degree, whereas for the US it is 35 percent.

TABLE 2
Top Source Countries for New Immigrants (mid-2000s)

	% of Immigrants	
	US	Canada
E. Asia (China, Korea, Japan)	9	20
S. Asia (India, Pakistan...)	9	20
S.E. Asia (Vietnam, Thailand...)	5	7
South/Central America (incl. Mexico)	49	7
Africa	6	13
Carribbean	5	3
Eastern Europe	6	10
Addendum: % with BA+	35	60

Source: Bonikowska et al (2011)

Table 3 provides data on the educational differences of immigrant populations. The difference between Hispanics immigrating to the US versus South East Asian immigrants is of particular interest. The stark difference in education level with more than half the Hispanic immigrants with a less than high school level and immigrants from SE Asia having already graduated from college.

TABLE 3
Importance of Education Differences

	Natives	All Immigrants	Hispanic	S.E. Asians
Dropouts	11	32	51	17
HS Graduate	30	22	27	16
Some College	31	19	13	18
BA or More	29	28	10	49
Including...Adv. Degree	11	12	3	21

Data Source: US Bureau of Labor Statistics, Current Population Survey, various years

Other characteristics of immigrants show the tendency to geographically cluster as well as clustering in certain sectors of the economy. Table 4 shows that 50 percent of immigrants in the US are located in Los Angeles, Miami, and Texas border towns. The tendency to geographically cluster is also evident in Sydney, Australia, Toronto, Canada and London, UK. There is also evidence that immigrant populations cluster by sector of the economy. Agriculture and food processing attract 50 percent of immigrants in the US with 30 percent working in healthcare.

TABLE 4
Other Differences

Immigrants are geographically clustered:	
•	LA/Miami/Texas border: 50%+ immigrant
•	Rural areas/small towns: 2-5%
•	Similar in Sydney/Toronto/London: 50%+
Immigrants also clustered in sectors/jobs:	
•	Agriculture, food processing: 50%+ in US
•	Healthcare: 30% in US

Data Source: US Bureau of Labor Statistics, Current Population Survey, various years

Table 5 provides additional detail regarding the composition of the immigrant population. The data on age, participation in the workforce and mean annual earnings help to provide a more comprehensive picture of the immigrant population. Data are provided for natives and second generation immigrants as well. As the data show, the net contribution to the economy in terms of taxes paid versus transfers received is positive.

TABLE 5
Per Capita Transfers and Taxes – Mid-2000s (CPS)

	All	Immigrants	Natives (incl. 2 nd Gen)	Second Generation
Percent Age 16-65	66.5	83.0	64.2	43.5
Percent Working	52.8	63.1	51.4	33.6
Mean Annual Earns	20,390	22,486	20,101	13,161
Value of:				
Total Transfers	1,820	1,295	1,892	2,014
Total Taxes	6,117	6,047	6,127	4,145
In Kind Benefits:				
Medicare (%)	13.6	10.9	14.0	16.7
Medicaid (%)	11.3	10.3	11.5	16.0
Enrolled in K-12 (%)	17.7	8.0	19.0	27.9

Data Source: US Bureau of Labor Statistics, Current Population Survey, various years

These data provide a context and foundation for the discussion that follows. To begin the discussion please welcome Orley Ashenfelter.

III. ORLEY ASHENFELTER

I would like to begin my comments with a review of the way that economists normally analyze migration. I'd then like to show you that some of the data are consistent with the standard economic model, but some are not. Following that I will move to the very troubling photo that was put up, the picture of the Jordanian refugee camp (see Figure 1). I'll come back to that shortly.

I've always thought migration was a very difficult issue for economists to discuss because the first thing we like to think about is maximizing world income. Doing that of course means that people should move very, very freely from place to place. But of course there are many

reasons why blockages are set up and it's clear that free movement is far from the norm across the world.

The economics of migration has a long history in labor economics and the guiding principle is that migration incentives result from comparing the financial benefits of moving against the costs. This is elaborated in the following way: consider the annual income difference for a person with certain characteristics as between where they are now and where they might consider moving. We may then ask, what's the discounted value of that income difference over the future working life of that person and how does that compare against the costs of moving?

There are some nuances to this question, of course, because the income or cost differences might be heterogeneous across workers with different characteristics. In other words, there could be a difference in wage rates between the US and China, as there is, but that difference no doubt varies with the characteristics of the people who are potentially movable.

A good example is a Chinese person with an economics PhD and a tenured position in the United States. Such a person will typically be paid more in China than they will be paid in the US, and there has been movement of these people to China from the US in recent years. On the other hand, the person who works in manufacturing is paid much less in China than in the US, and migration, when it is permitted to occur, is entirely in the opposite direction. So the insight from this analysis is that it's not equally probable that people with different characteristics will have an incentive to move.

There's a second insight from this analysis, which derives from the fact the discounted value of income differences depends on how long you have to work. One implication of this model, which goes back a long way and has been tested, is that older people are less likely to migrate than younger people. That is certainly true in the data we have. The evidence also suggests that older people would be predicted to migrate more than they actually do but, nevertheless, the basic prediction works.

At some fundamental level, this model, which certainly has something going for it in explaining economic migration, also clearly doesn't capture what must be a very large component of non-financial costs of migration to individuals.

My favorite example is the comparison of Puerto Rico, which has just gone through a hurricane disaster, and mainland United States. A lot of people don't know this but people who are from American territories and commonwealths (which includes Guam, American Samoa, U.S. Virgin Islands, Puerto Rico), that is, anyone who lives as a citizen in one of those places can, without a passport, move straight to the U.S. They are treated exactly like American citizens once they arrive in one of the 50 United States. So there are no barriers to immigration from an American territory to the US proper.

The only barrier as an American is that you have to have housing. But other than that there are literally no barriers whatsoever. Despite that, the Puerto Rican worker who migrates to the US earns about \$600 a week, which comes to over \$30,000 a year. A Puerto Rican worker on the island makes about \$10,000 to \$15,000 a year. So there's a \$20,000 difference in pay between the person who stays in Puerto Rico and the person who migrates to the US. At a discount rate of 10 percent that's roughly \$200,000 for a young worker, and even at a discount rate of 20 percent, which might be appropriate given how high the interest rate on credit cards is, this is still \$100,000. That is the income perspective. It certainly does not cost \$100,000 or \$200,000 to move to the US. This example shows that migration is smaller than it should be based on economic incentives alone. There is less migration than you would think there would be. That is one point I am making.

The second point I want to make is about this picture (Figure 1). The most troubling aspect to immigration is really not at the economic level where immigrants take advantage of the opportunity to earn more. Of course, by doing that immigrants are increasing the world's income as well as their own. That is an interesting subject but right now we have a much bigger issue. That is the problem of refugees. These are people who are not pulled from their homelands, but pushed out of them.

Figure 1 shows a refugee camp, mostly Syrians, in Jordan. That is not the only camp there. These camps are run by the United Nations (UN) High Commission for Refugees which was started in 1950. It is the same commission that was started to relocate a million people after the devastation of the Second World War. It has just as much work to do today, if not more, than it had then.

Right now the UN High Commission has millions of people of interest to them; that is, not only refugees but people who are at risk and in whom they have a special interest. The total number of people at risk for 2015 was about 57 million people. This is a population that is far larger than the population of Australia. There are 57 million people at risk, of which about 15 million live in camps like this one. That is the human tragedy. We need to do something, other than keeping people in those camps, to solve the problem.

I think actually the probable solution is not what people think it is. I don't see how those 15 million people can move to the rest of the world despite the fact that, in a country like the US, although it would be a significant change in the population, it still would add less than 5 percent to the US total. Nevertheless, in today's political climate such large movements do not seem possible. I think what has to happen probably is a proposal that has been made by many others; turn these camps into actual cities where refugees become regular citizens. Needless to say, this is an extremely complex social problem as much as it is an economic problem. In any event, if this kind of "push" migration is not handled with care we will continue to witness this massive human tragedy.

IV. DANIEL L. MCFADDEN

A major controversy in current economic and political opinion is whether opening the borders of the developed country to immigration by refugees is harmful to the national interests, and in particular harmful to poorly situated natives who may face competition for jobs. I would ask you to do the following thought experiment. Suppose that every city of any size in Australia had its own borders and own immigration control, so that if you wanted to work in Newcastle coming from Sydney, or from Brisbane, you would have to go through an immigration checkpoint, perhaps face a queue, perhaps not be admitted if quotas had been filled. Clearly, this would be disruptive and inefficient political intervention in economic activity.

On the other hand, consider a thought experiment in which Australia opened its borders and were inundated with 50 million immigrants over a few years. The current infrastructure is unprepared to handle this inflow, and it is difficult to imagine building it out to do so. Housing, schools, transportation, and health facilities would be overwhelmed. But while the short-term disruptions would be daunting, there is nothing in principle about a high rate of immigration into Australia that is economically detrimental. You can imagine that in 50 or 100 years, if Australia could successfully manage the water, energy, and other natural resources these immigrants require, it would be an even more prosperous place.

Now there are in the world some countries that actually have internal migration controls, China and Cuba being two examples. What you see in these places are severe economic inefficiencies. In China the economic incentives for internal migration are so strong that the

internal migration controls have largely broken down, and the country is slowly adjusting its controls to regularize migration with high economic value to urban areas and industrial zones.

Cuba has not yet come to grips with the economic burden of internal migration controls. A decade ago I raised this issue with Fidel Castro, and his response was that Cuba is not China. But I think the lesson here is that economic assessment of the effect of immigration needs to start from the observation that just like other economic resources, it's better by and large to have free flow and open exchange than to have compartmentalized activity and rigid borders.

I will try to channel David Card on immigration, because I think his research on this topic is definitive in terms of the impact of immigration on an economy. I refer to his paper "The Impact of the Mariel Boatlift on the Miami Labor Market," published in 1990 in the *Industrial and Labor Relations Review* (Card 1990). The circumstances of the Mariel boatlift were this: In 1980 the government of Cuba allowed 125,000 people to sail to Miami in a private flotilla that departed from the Cuban port of Mariel. These refugees included a relatively high fraction of less skilled workers and a high fraction with low English skills. They also included some fraction of individuals released from jails and mental institutions in Cuba. About 45,000 of these refugees settled in Miami. That increased the Miami labor force by seven percent and its Cuban labor force by about 20 percent. Card examines the impact of these immigrants on the Miami labor market, and tracks the fortunes of these immigrants and their children.

The study shows clearly that the Mariel immigrants had very little negative impact, even among native low income minorities with similar work skills. There was initially some increase in unemployment rates in Miami for unskilled workers, but the evidence is that this was almost entirely due to high unemployment among the new immigrants themselves. The native unemployment rate, including previous waves of immigrants, were essentially unchanged. Further, after two years unemployment rates in Miami had returned to baseline levels. There was no significant fall in wages, even during the period when the labor pool increased sharply in Miami.

Overall, the picture that emerges is that when immigrants are relatively free to enter labor markets, they will migrate to where workers are needed. Then their earnings are sufficient to meet their own economic needs, and they generate enough economic activity so they do not displace domestic workers or impose a long-term drag on the local economy.

Immigrants do impose an initial added burden on public services, particularly if language is an issue and immigrant initial unemployment rates are high, but this burden regresses fairly rapidly to the baseline public service burden for natives of comparable education and skills. This does not mean that these immigrants necessarily pay their own way in terms of public services, but it does mean that the burden is not very much different from a native person with comparable skills. Therefore, while issues of cultural assimilation and the merits of diversity need to be addressed in discussions of immigration policy, economic impacts are not a reason to oppose policies that accommodate immigration.

V. ABIGAIL PAYNE

I am going to build off some of the slides that David Card created for this presentation and then I'm going to add my twist.

My twist to this conversation is that I'm looking at immigration through the lens of a public economist. I'm building off of Dan's comments concerning the impact of immigration on communities and the role that government policy plays.

Let's first start with one of the few surveys on attitudes towards immigrants. These questions are from the two waves of the European Social Survey: 2002 and 2014. Table 6 depicts the answers to questions on whether or not the respondent thinks it's better if everyone shares the same customs and traditions. Other questions on the survey captured views on immigration. Table 7 shows some questions asked on personal values such as should we accept more people from poor countries?

TABLE 6
European Social Survey Study

Indicator Questions for Wage/Tax Spillovers:

1. Do you agree/disagree that immigrants **lower wages**?
2. Do you agree/disagree that immigrants **harm the poor**?
3. Do you agree/disagree that immigrants **fill job shortages**?
4. Do you think that immigrants **take away jobs** from natives or **create new jobs**?
5. Do you think that immigrants **take out more** (in social benefits) **than they put in** (in taxes)?

Source: European Social Survey

TABLE 7
European Social Survey Study (2)

Indicator Questions for Compositional Spillovers

1. Do you agree/disagree it's better if everyone **shares the same customs and traditions**?
2. Do you agree/disagree it's better if everyone **shares the same religion**?
3. Do you agree/disagree it's better if everyone **shares the same language**?
4. Do you think that immigrants **undermine or enrich the culture** of the country?
5. Do you think a country should **stop immigration to reduce social tensions**?

Source: European Social Survey

Some of the takeaways from the European perspective are that the views towards immigration really depend on both the economic wealth of the country and the composition of the spill over effects for the country. You will see in Table 8 variation in each country in terms of its relative wealth and then how it perceives immigrants from wealthier or less wealthy countries. Overall, these surveys suggest a fairly negative attitude towards immigrants. We will highlight this through a couple of figures.

TABLE 8
European Social Survey Findings

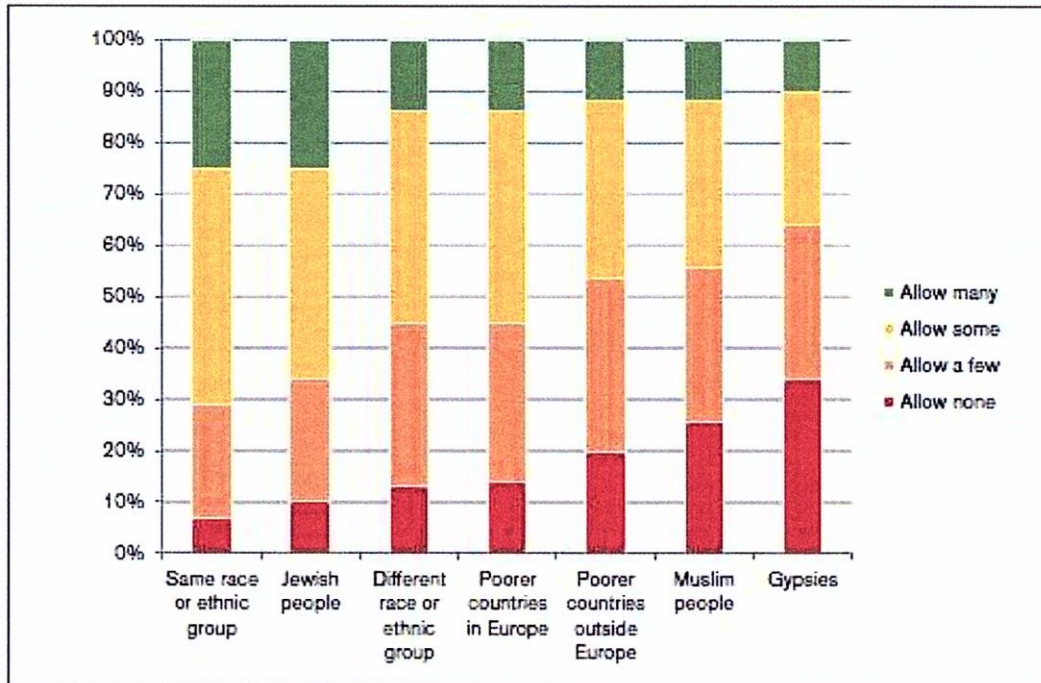
European views on immigration depend on both economic (20%) and composition (80%) spillover effects.

Views about immigration policy (restrict or increase immigrant flows) are mainly driven by concerns about compositional spillovers.

Older, rural, and non-college grads are more concerned about compositional issues, and these concerns drive their more negative policy views.

Figure 3 depicts the results from a survey where red is a bad outcome, green is a good outcome in terms of if you think about immigration being a good outcome. What you'll see is that if you're going to allow immigration for people that look like me, the respondents are okay with it. If you're going to allow immigration for people who don't look like me the respondents have more negative opinions.

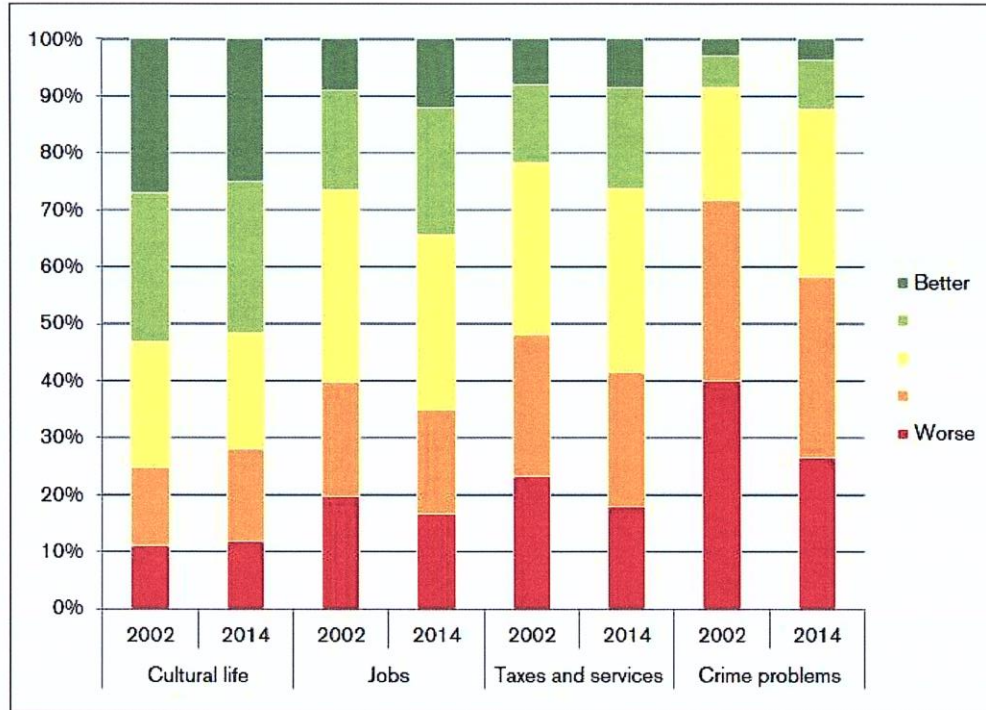
FIGURE 3
Attitudes towards different sorts of migrant in 2014



Source: European Social Survey Round 7, 2014 (all participating countries)
Analysis was conducted on the full sample of ESS respondents. Both design and population weights have been applied. Results exclude DK and refusal responses.

Figure 4 shows that part of what is driving opinion is how we think about immigrants and our attitudes about how immigrants add to our culture. In terms of cultural life you can see generally having more immigrants is a good thing, it adds to art, culture. I'm sure everyone in this audience enjoys going out to dinner and enjoying food from different ethnicities. Those are positive spill over effects of immigration. But as you move on to jobs it starts to get a little bit more negative. Taxes and services, a little bit more negative. Finally, increased perceptions that immigration results in greater crime. So in terms of thinking about the delivery of public services and what's needed, there's an overall negative spill over effect.

FIGURE 4
Perceptions of the effects of migration on cultural life, jobs, taxes and services, and crime in country in 2002 and 2014



Source: European Social Survey Round 1, 2002 and Round 7, 2014 (all countries participating in both rounds)
 Analysis was conducted on the full sample of ESS respondents. Both design and population weights have been applied. Results exclude DK and refusal responses.

What's interesting is that if you compare the opinions between 2002 and 2014 in each of these categories there's not much change in attitudes and perceptions even though the background and countries of the immigrants that were coming in the early 2000s are very different from the immigrants that are coming in 2014.

How do we put this into context? This is where public economics plays a role. One of the things, and this has been highlighted by both Orley and Dan, is that we tend to discuss immigration to a country is for the same reason. But the reason for immigration can range from being a refugee to entering under a skilled/higher education visa.

So why do we bring in a refugee? It's not really for an economic purpose. It's for humanitarian reasons. We think it's the right thing to do. But then if you move into the low skill migrant, for the low skill worker there's probably an element of a humanitarian perspective to it but then there's going to be some aspects of economic growth perspective. Finally, when you go to the high skill immigrant it's going to be what's driving that immigration from a country's perspective or a community's perspective is that it's going to help promote growth.

Now I happen to have spent over 20 years in Canada and then I moved to Australia two years ago. Both countries are similar in their immigration policies in that they favor high skill immigrants. They favor increasing population because they believe that population growth is one of the drivers towards economic growth.

A final reason for immigration has to do with wealth and injecting financial capital into a country. In some countries, there are ways to buy your way into the country, if you're willing to invest enough in the countries. That is another dimension that we tend not to talk too much about. Is this type of immigration a good thing or a bad thing?

Considering Table 9, you want to think about the reasons for migrating by each type of immigrant. The result is you have population growth. Whether that population growth is from birth-rates, inter-state migration, or from immigration, we know what happens when you think about publically provided goods, it can be schools, it could be deterrence of crime, it can be roads, congestion, housing, etc. that are going to start creating congestion along different fronts. Governments have to decide how they are going to handle the increased demand for public goods and services when there is population growth (see Table 10).

TABLE 9
Context...Immigrant types

Reasons for Move	Type of Immigrant		
	Refugee	Low Skill	High Skill/Capital
Humanitarian	X	X	
Economic/Growth		X	XX

TABLE 10
Impacts on Communities/Public Goods

What happens to communities with increased population?
<ul style="list-style-type: none"> • Roads, Schools, Parks, Housing
What is the impact on decisions re: publicly provided goods/services?
<ul style="list-style-type: none"> • Government revenues <ul style="list-style-type: none"> ○ Economic v. non-economic oriented immigrants • Decisions by government <ul style="list-style-type: none"> ○ New immigrants and permanent residents do not have voting rights <ul style="list-style-type: none"> ▪ How does this affect political decisions? ○ Once voting rights conferred <ul style="list-style-type: none"> ▪ Increase in diversity of opinion (due to culture/background) <ul style="list-style-type: none"> • Can lead to divergence in opinions

The question is, as we are experiencing that congestion, do we blame that congestion on immigrants or do we blame it on overall population growth?

So, first of all an immigrant comes in, usually they come in under a visa. Under a visa they are going to have access to certain types of public services. They will have access to schools. Their taxes will help pay for their schools. But they don't have, for instance in Australia, if you come in under a visa, if you want healthcare you are expected to purchase private healthcare insurance. Then at some point you move from that visa to the landed status or permanent residency status or green card status which entitles you to more of the public services. Then you are pretty much treated like a citizen, but what is different is you do not get to vote.

Let's consider public good provision from a politician's perspective. Let's pretend I'm a politician. I'm representing a community, I'm representing a State, half my constituency are natives who vote for me. The other half don't vote for me. What decisions do I make? How do I think about the delivery of public services? How do I think about what is going to get me re-elected? How do I react to the voter's sentiment?

There is a long history of literature dating back to 2002/2005 (e.g. work by Alesina and La Ferrara) that suggests that the more diverse a community is, the lower the level of public services that are provided. What drives this can be a lack of consensus among voters. This can

be driven by a difference in opinions, backgrounds, or perspectives of how to treat those that look like you or do not look like you.

There's also research I've done on charitable giving. More diverse communities are observed giving less to charity than more homogeneous communities. What drives this finding? Is it cultural differences or is it attitudinal differences? Other researchers have undertaken experiments that use natural disaster incidents to measure a willingness to donate to others. The research suggests that subjects that are shown pictures of people that look like them are willing to give more than if they are shown pictures of people that look different from them.

A recent paper in *AEJ* by Daniel Jones and others study the effects of diversity in politicians on public good provision. Their analysis suggests a more diverse legislative body leads to lower levels of public good provision.

I think part of this immigration story is not just about who's coming in and how this affects labor markets and/or economic growth. Another important facet of immigration is the effects on public good provision and the decisions made about the level of services and goods to provide.

VI. JASON POTTS

Yes, I want to take a slightly different angle on this and just to pull back a little bit and look at the role of economists in trying to understand and contribute to solutions to what we'll call the immigration problem.

Now the immigration problem, in simple terms, is that it is a long run economic net good. That's one thing that we've spent a long time figuring out. But it's a political bad, or a cultural bad, and for all of the reasons that have been mentioned. And this is the basics of the conflict in this; an economic good, a political bad. That's the immigration problem.

The way in which economists have contributed to this problem is by doing all the work we've just described. So we've set it up as saying trade theory tells us why this is an economic good. Free movement of any valuable factor of production, is good. Human beings are valuable factors of production therefore the default *a priori* position should be open borders, with control, but essentially a preference for free movement of goods. And that's what economic theory says.

Then we can back that up with evidence. So there's proof that it actually is this economic good and the work that David Card and many others has just documented painstakingly in enormous detail the extent to which theory supports this, evidence supports this. This is an economic good but still a political bad and a cultural bad.

So let's look at how economists have framed this. It's more or less trade theory, labor market theory and public goods theory. Let's frame it from that perspective. There's one angle we've missed and this is maybe an empirical question whether this is significant or not. My priors are that this is an important thing that economists have overlooked, is that immigration is also an information problem. We can use information economics to understand what's going on here. From an information perspective the problem that we've got is we're stuck in a market-for-lemons situation, that with missing information or information uncertainty or asymmetric information, what you end up with is a collapse to a Nash equilibrium where everyone assumes the worst about everyone else. And when we make policy based upon that assumption we shouldn't act surprised that the politics ends up being a lot harsher, a lot more anti-immigration, than the economics suggests that it should be.

So this will be my point, just to argue I think that if we can also introduce information economics into this story we can unpack the economics of immigration policy. The evidence of economists looking into this, for instance Bryan Caplan at George Mason University who argued that the problem is that most people aren't economists and therefore they easily fall for economic fallacies and so the average sentiment is usually both anti-free trade and anti-immigration (Caplan 2007). And so our role is to correct that with theory, with evidence, with teaching, with persuasion. So that's one major way that economists have contributed to resolving the immigration problem.

The other way that economists have contributed, in passing more than in practice, is things like Gary Becker's proposal for citizenship markets (Becker 2005). To say maybe we can use markets in this space. Maybe if we sell passports or citizenship we'll get a better allocation of people across countries.

And again theory suggests why that should work because his diagnosis was essentially to look at immigration and see that in its modern institutional political formulation, it's a quota system. Basic trade theory suggests that if we replace a quota system with a tariff system we should get welfare improvements that are equivalent to markets for citizenship, i.e. citizenship for sale. Becker proposed that and everyone just said that's fine in theory but it won't work as policy. So again, it's one of these things that works in economic theory, but it's a political non-starter, it fails the political market test.

The other things that have been done are things like unbundling the citizenship stack as Abigail was talking about so that maybe we don't need to sell citizenship as a full service. It can be unbundled into a package of say residency but without voting rights, and again we can design institutions around particular bundles.

So that's two ways economists can contribute to solving the immigration problem: persuasion about economic trade theory, and new institutional design approaches.

The third approach I suggest is looking at immigration as an asymmetric information problem, and approaching asymmetric information problem in a very straightforward way. I front up at a border. I have to make claims about identity, health, criminal record, a whole bunch of attributes that I have, and I know these all to be true. But what we're dealing with is cheap talk. I have to prove that these things are true to someone who is sceptical against that. And anyone could make these claims.

So you end up with a situation where we arrive at a high hurdle to make those claims, which means that people who are speaking the truth are actually facing a very high hurdle that is costly to do that. We're kind of stuck in that situation. It's the reverse as well. So it's not only cheap talk situation in one direction. The State has a problem of inducing you to reveal the truth about things that you don't want to reveal. So maybe you have had a criminal background. How do I create a mechanism to induce you to reveal that information? So its asymmetric information problems on both sides and the consequence of those fundamental asymmetric information problems that have always been there is uncertainty that translates into political mistrust.

You end up with an equilibrium where you're trying to fill out a ledger of 'this person is a citizen, this person is not a citizen' and that ledger is full of uncertainty. Everyone in those pictures of the refugee camps that Orley showed us is an example of missing information or ambiguity about information or unverifiable information. So in one sense a lot of the immigration problems are equilibria of bad information.

Okay, so what type of solutions may we have? Diagnosing something as an asymmetric information problem suggests may be sort of costly signalling type mechanisms and maybe

mechanism design can help us with this, and I'll walk through one way which I think could be true.

Another way is technology. So where I want to get to now is, I'm not a labor economist or public economist or immigration economist, I'm a blockchain economist basically. I work on new information technologies. And what's interesting about technologies like blockchain, which are very new, is that this is a technology for recording truthful information on a ledger.

Immigration is a problem of recording truthful information on a ledger. Nine years ago we didn't have a technology to do this. Now we do. And what I suggest as one of the next steps in possibly thinking through government solutions to immigration problems is government adoption of new technologies in this space for dealing with this.

One way this could work, and that is already in use, is decentralized identity protocols. So at the moment we have centralized identity protocols such as passports and driver's licenses. There's a registry somewhere in a government building and if your name is on it, and you've got a tick next to it, then you've got a passport or a driver's license. And people who don't have citizenship, there's no ledger anywhere in the world that has a tick next to their name. That's how identity works with centralized ledgers: you just have to be from a country with good centralized ledgers.

Blockchain technology enables decentralized identity protocols. Instead of having a centralized ledger that you can point to and go there's my name, we can create identity by network validation in a vast network of all sorts of verifiable or cryptographically signed transactions. I can prove that the set of transactions, and some could be monetary transactions, some could be media transactions, and if I can prove that it was overwhelmingly statistically likely that I was the person who made one of those transactions, I can show identity.

And this notion of decentralized identity is starting to be developed. At the moment it's a new way of doing it but the beauty of it is that it doesn't rely on a centralized government registry. Anyone, if they can prove the validity and a network of transactions, can prove identity. So this is perfect for someone in a refugee camp. This is perfect for someone from a failed State.

So basically new identity technologies can help overcome information problems that are causing immigration problems. Once you've got identity technologies you can then tie those to education credentials and other sorts of claims about yourself which are also part of the immigration validation problem. Finland has started using this already. This is very new technology to solve this.

Another mechanism that we've developed (with Vijay Mohan) is what we're calling crypto-confessional (Mohan/Potts 2018). We built this as a way to solve the doping in sports problem where you want to create a mechanism to incentivise someone to reveal information they really don't want to reveal because the minute they reveal it they are banned. But you still want that information.

So how we deal with this currently is if you're an illegal immigrant and you're caught, you get punishment. The only information from illegal immigrants comes from the ones that get caught. But there's only one type of punishment, the same type of punishment for everyone. What our crypto confessional mechanism does is it sets up an incentive to provide true information, to write it to a blockchain and sign with a private key. You'll reveal exactly your criminal background, your skills, everything. You put the information in. Everyone can see the information. But no one can tell who put the information in. The transaction is public, but anonymous.

Now in such a world we can incentivise the honest revealing of information with two-tier punishment. If subsequently the State catches you as an illegal immigrant, you can use your private key to unlock the ledger and show that you've already revealed it: In that case you get a type-one punishment, say a fine. But if it turns out that we catch you and you haven't put that information in, then you get a type-two punishment, a worse punishment, say deportation. So to incentivise truthful revealing of information requires two levels of punishment. And the theory we've developed shows that basically you can tune the punishments to make it incentive compatible to reveal true information.

So the point of this is that we can use new institutional design mechanisms, cryptoeconomics and technologies, to actually resolve a number of these, or at least improve, a number of these information problems that can go toward solving the immigration problem. And I'll stop there with that notion.

VII. ROBERT GREGORY

Australian immigration research, to a large degree, is determined by the US research frontier. There are good reasons for this. Australian academics want to publish in the best places and the best places are US journals. Furthermore, US editors are more interested in research that is closely related to their perception of US immigration issues than in research which investigates special features of the Australian immigration landscape. Hence, most Australian research is not determined by local priorities. In the following comments I emphasize local issues that should be at the center of our research but because they are largely ignored in the US they are largely ignored here.

I focus on four potential research areas: the value of the binary division of the population into native and overseas born, labor market integration of immigrants, recent immigration policy changes in Australia and macro-outcomes of migration policy shifts.

A. Who is an Immigrant – the binary division of born in Australia or born overseas?

Who is an immigrant seems a straightforward question but it is not! US immigration literature, overwhelmingly, divides their analytical models into two groups of people; natives and immigrants, which seems sensible. An individual is either one or the other!

In Australia, however, thinking of the native-immigrant distinction in this binary way – immigrants in one box and natives in the other – is not so sensible. I illustrate this with an example.

In most countries, changes in migration policy are often thought of as flowing from changes in native attitudes towards future migration inflows and not at all from changes in resident migrant attitudes. In this regard, I believe there might be a fundamental difference between Australia and the US, which has been largely ignored.

One reason why there may be a significant difference between the two countries is that the migrant proportions of the population are very different. In Australia, twenty-eight percent of the population is born overseas. To focus on native attitudes alone therefore is to ignore almost one third of the population, almost all of which vote in national elections. In the US, the proportion of voters in a Presidential election who were born overseas is about 5 percent. In Australia, the proportion of voters in a national election that is overseas born is four to five times larger.

Furthermore, to focus on the migrant third of the Australian population is probably an understatement of the potential influence of migrants. Suppose, children are strongly influenced by their parents' heritage and social and political views, including attitudes towards immigration policy. If an individual is born here, but their parents are born overseas perhaps we should think

of this individual as part immigrant, at least with respect to attitudes towards immigration policy changes. Obviously, an individual with a parent born overseas is not a “pure” immigrant but the question is should they receive any weight in any analysis of immigration – should we think of them as half an immigrant, some smaller proportion of an immigrant, or just give them zero immigrant weight and think of them as a “pure” native.

Once the definition of an “immigrant” moves beyond place of birth it potentially encompasses half of the Australian population, since half of the Australian population is either born overseas, or has at least one parent born overseas. One half of the population is a large proportion!

Furthermore, suppose husbands and wives are influenced by each-other’s views. In Australia, there is a high rate of intermarriage between immigrants and non-immigrants. Perhaps another 10 to 15 percent of the population is in this category. So, when thinking of influence on immigration policy should the researcher give the spouse of an immigrant a *de facto* immigrant weight?

An attempt to account for immigrant and immigrant -related categories could increase the *de facto* immigrant share to 60 to 65 percent of the Australian population all of whom may have a view on immigration policy influenced by their own immigrant experience or that of their family.

So, it seems overly restrictive in Australia to think of the influence on immigration policy by focussing only on the native born. Perhaps we should give substantial weight to ‘immigrants’ more broadly defined, especially in a country where the immigrant share of the population is so high.

B. Immigrants and Labor market integration

The US immigrant literature, and especially the older literature, tended to emphasise how quickly immigrant earnings caught up with native earnings. More recently the focus has moved to whether immigrants depress native wages.

But these debates do not have much resonance here. In Australia, the average first generation immigrant is better qualified than the native born, and on average earns marginally more income. So the important question is not how quickly do immigrant earnings catch-up to native earnings, nor is it to what extent immigrants depress native wages. More interesting questions are how quickly do immigrants and their offspring drop down to native income levels or do immigrant income levels move ahead of native incomes as the period since arrival lengthens.

C. Where do Immigrants come from?

This is also an important distinction between the two countries. Now-a-days I like to say that “most immigrants to Australia come from Australia” which I think is an interesting way to begin an immigrant focused discussion. How can most of our immigrants come from Australia?

Half a century ago, most immigrants came to Australia by applying for a permanent visa while residing in their home country. Australia then decided whether to accept them or not. If the visa was granted the immigrant came. If not they did not come.

This is not the current practice. Today, most migrants initially come to Australia on a temporary visa (with work rights) which is fairly easily acquired. Then, after a while, they decide whether to apply for a permanent visa, while in Australia, and then Australia decides whether to grant their application. To become a permanent resident has largely become a two-step process – first step is to arrive on a temporary visa, second step, after arrival and after some time has lapsed, is to apply for a permanent visa while in Australia.

Our recent policy has created two classes of immigrants – permanent visa immigrants (mainly apply on shore) and temporary visa immigrants (mainly apply off shore). So, in response to this new policy, immigrant status is now blurred and it is important to distinguish between those who hold permanent and those who hold non-permanent visas. Integrating this distinction into immigrant research requires an entirely different way of thinking about immigration than in the past.¹

This distinction between temporary and permanent visa holders is not a trivial issue (Gregory 2014). Today, the stock of foreign born on temporary visas with work rights is equivalent to about eight or nine years of permanent immigration inflows. This has many important implications.

Suppose, for example, the researcher is interested in the relationship between immigrant outcomes and period of residence. If the sample is immigrants who have been in Australia for ten years or less, then half of this stock is currently holding a non-permanent visa. This non-permanent group, with working rights, will include students, backpackers, and those on short term employment contracts. If the temporary and permanent resident visa groups behave differently in the labor market, as you would expect, then mapping the changing immigrant integration into the Australian economy, as the period since arrival lengthens must fully account for the changing mix between permanent and temporary status as the period since arrival lengthens. Likewise, measuring the degree of integration after the immigrant receives a permanent visa can lead to misleading conclusions as to how quickly immigrants settle in as the individual may have spent many years in the Australian labor market before receiving the permanent visa and this pre-permanent visa period may be missed.

Consider another issue. Economists often discuss how much the receiving country pays for immigrant integration into the economy and society. When visas are temporary, and there is no access to welfare programs, it is the immigrant who pays most of the integration costs.

For example, suppose an immigrant comes to Australia as a student, and then after four years on a student visa moves to 457 skilled migrant visa and then after two years on a 457 visa, receives a permanent visa. Suppose this individual arrives at 20 years of age. That means all the costs of getting that person to 20 years of age was paid in the home country. Then, the cost of moving the individual from 20 to 27 year of age in Australia is largely paid by the migrant. Perhaps they pay \$40,000 a year for a degree, three years at \$40,000 is \$120,000. Then there are living costs which are often paid for by capital they bring from home. That could be another \$40,000 a year. So a typical immigrant coming into the education system might bring to Australia one quarter of a million dollars or more over a three to four year period.

Which immigrants can afford this? Only those who are well above average income in the sending country and who will probably become an above average income individual here. So, instead of Australia paying many of the immigrant integration costs, as it did under the old system, the new system has the immigrant paying for the integration costs. If the integration process is relatively successful, and the immigrant finds a high paying job, the move to a permanent visa is relatively easy. If not successful at job finding, the transition to a permanent visa is difficult and the immigrant is likely to return home. Australia therefore tends to grant permanent visas to the most successful in the labor market. So, compared to other EU and North American countries, we are quite special in terms of our selection of immigrants into

¹ The legal-illegal distinction is also a major difference between the US and Australia. Illegal immigration is very much a minor issue in Australia. Most illegal immigrants are short overstays from temporary visas.

permanent visa status. Large inflows of unskilled overseas born which dominate US policy discussions are not an issue here.

Many of the above features of the Australian immigrant landscape are obvious in every-day life. Our universities are now financially dependent on foreign students on temporary visas paying high foreign student fees. Many industries now depend on temporary visa immigrant labor, performing what used to be thought of as jobs for the unskilled. The increasing relationship between visas and the labor market came up in the wine session earlier in the conference where it was stated that immigrants are buying vineyards to obtain permanent visas through the business visa category and well qualified immigrants are working at harvesting grapes when they hold temporary visas, either as holiday makers or students. The important flow between temporary and permanent visas is largely ignored in immigration research in other countries but it is a key issue here.

For many Australian born who are unskilled their biggest threat to their jobs are not unskilled migrants but high skilled migrants who will become future accountants, bankers and lawyers but who are taking unskilled jobs, on temporary visas, as part of their way towards a permanent visa. The traditional US analysis would suggest that the bankers, lawyers and accountants who are overseas born bring in human capital, and they should increase jobs for the unskilled via complementarities in labor skills. This may be true after a number of years residing in Australia but is probably not true in the short run. In hotels, retail stores, restaurants, and virtually anywhere in the service sector, where there are low wage jobs, there may be few low skilled local born employees. Many of the individuals working in these low skilled jobs, however, will be high skilled migrants, working on temporary visas before moving to permanent visas.

D. What is the Australian overarching immigration policy issue?

At the policy level, immigration to Australia is thought of primarily as a population issue. The key questions that are usually posed are how large should the Australian population become and how quickly should the population grow? Naturally this discussion extends into economic and environmental issues and matters of social and political cohesion. Immigration is not often discussed in narrow micro terms of job competition between immigrants and native born, or in terms of immigrant impacts on native wages.² Of course, population size is an issue of interest to the immigrant and native born alike.

Since immigration policy is largely thought of as a population size policy, Australian analysis of immigration flows should raise different questions than those usually raised in North America.

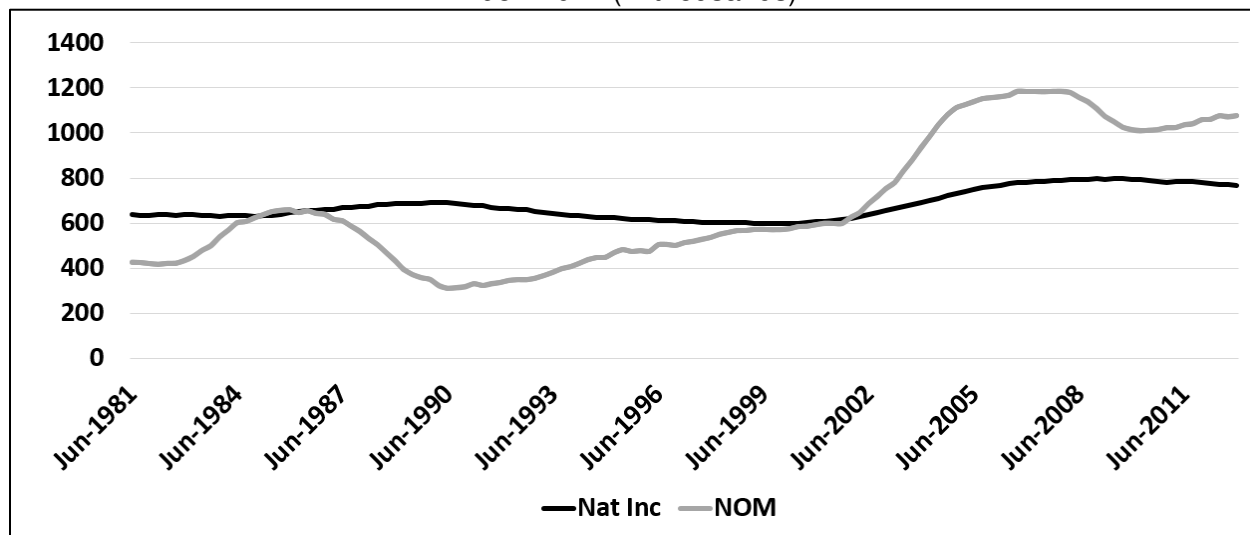
One set of questions revolves around stability of policy attitudes towards immigration and population numbers. On the basis of past outcomes the evidence suggests that attitudes here are not very stable, despite the widespread acceptance that population size should be a stable long run objective. Furthermore, the new policy which separates permanent and non-permanent visas weakens control over immigrant net inflows and makes immigrant numbers much more volatile than in the past and therefore changes in population size are more volatile. I do not have time to discuss this in depth but let me show you some evidence.

Figure 5, presents the time series data on population change over the last four decades. The data are presented as five year moving averages and divided into natural increase (excess of births over deaths) and net overseas migration. The average natural increase over a five year

² Of course this does not mean there is no interest in these questions it is just that they tend not to loom large on the immigrant policy discussion landscape.

period is just over 600,000 for most of the period but then, from around 2004 forward, the five yearly increase lifts to about 800,000.

FIGURE 5
Five Year Natural Increase (Nat Inc) and Net Overseas Migration (NOM)
1981-2017 (in thousands)



Data Source: Australian Bureau of Statistics. Australian Demographic Statistics, 3101.0
September 2017

The five yearly population increase attributable to net overseas arrivals is less stable and the historical relationship between these two sources of population increase has changed considerably.³ For the decade and half before 2005 the change in the natural increase of the population exceeded the net change in migration. After 2005, the relationship shifts and dramatically so, in response to a large jump in immigrant inflows, equivalent to just over one percent of the population each year. This lift in immigration inflows is an outcome of the new immigration regime which encourages immigrants to arrive on temporary visas and allows the growth of temporary visas to be determined by the private sector, subject to various government quality controls. Universities, for example, were able to offer places to overseas students on temporary visas and business was able to allocate temporary visas to skilled workers. Government kept some oversight but control of immigrant numbers on temporary visas was very loose.

Over the last decade the lift in net overseas migration added between 1 and 1.2 million people each five years to the Australian population (around five percent of the population stock), with very significant implications for the construction of buildings, infrastructure, roads and schools. From the decade before 2000 it had been anticipated that into the future the population increase each five years from net immigration would have been around 600,000 and not the big lift to over one million. As a result, the infrastructure in Sydney and Melbourne, our two major cities where immigrants largely settle, has become increasingly inadequate. Indeed a decade and a half ago the Australian population had been projected to reach 25 million just before 2050. This

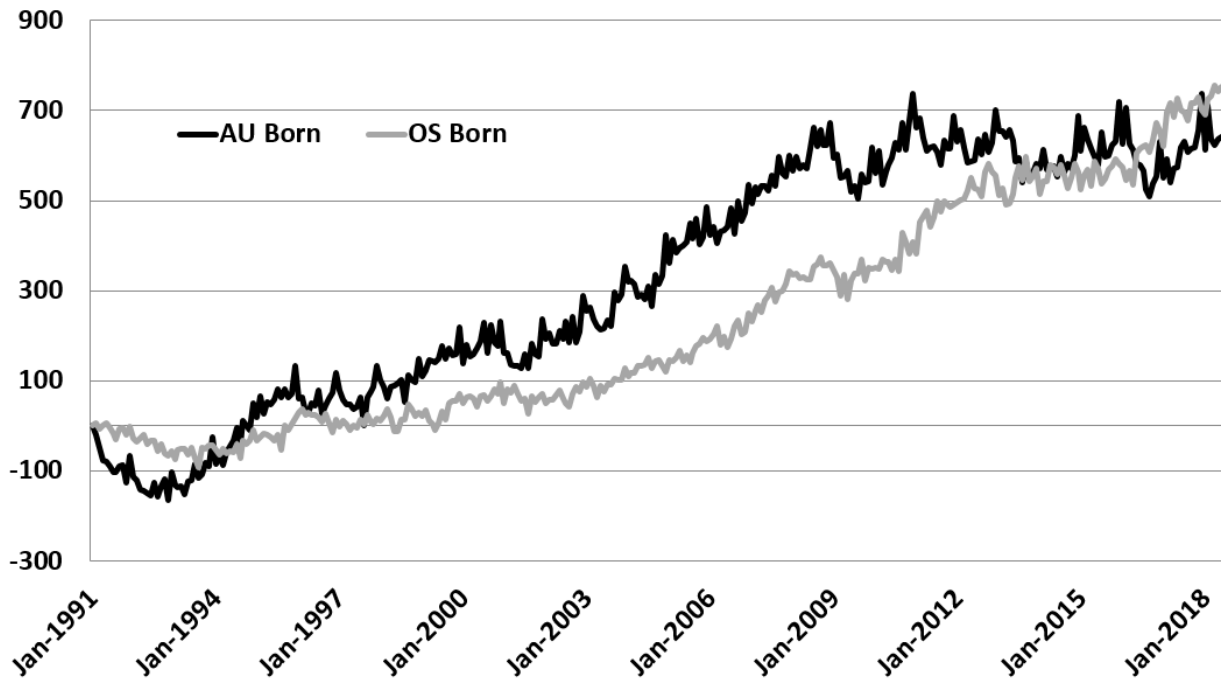
³ These data do not exactly coincide with a native or overseas born classification but the approximation is very close.

number has been passed this year, thirty years earlier than expected, and the new projections suggest almost 40 million people living in Australia by 2050, a revision upwards of 60 percent.

In response to large net migration, government and all segments of the population at large, have become increasingly dissatisfied with the infrastructure lag in the cities and the growth of travel times and city congestion that these lags have generated. Australian immigration authorities therefore have begun to reduce the granting of permanent immigration visas, but, to this point, less permanent visas granted have been offset by a lengthening of temporary visa stays with the result that there has been no reduction in the increase in the rate of growth of the immigrant stock.

To emphasise, how important are the macro outcomes of changing immigration inflows consider Figure 6 which plots the growth in male full-time jobs over the last three decades.

FIGURE 6
Growth of Male Full-time Employment: Australian (AU) Born and Overseas (OS) Born
1991-2018 (in thousands)



Data Source: Australian Bureau of Statistics, Labour Force, Australia, LM5, 6291.0.55.001, May 2017

I take the number of male full-time jobs in each month and subtract the number of male full-time jobs as at January 1991 and plot separately the additional number of full-time jobs held by natives and overseas born. The first thing that strikes me about Figure 6 is the large change in the relationship between these two series.

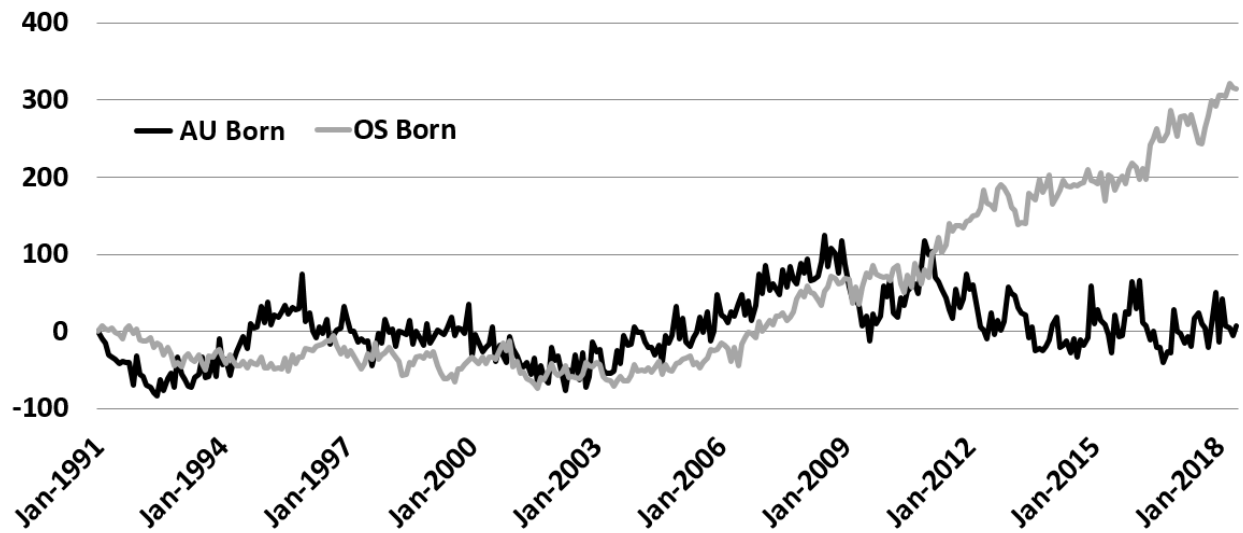
For the first decade, June 1991 to January 2000 all full-time employment growth was filled by native born. Immigrant full-time employment levels were unchanging despite positive immigration growth rates.

For the next decade, January 2001 to January 2010, the full-time job growth was shared fairly equally between the two groups.

But, over the last decade, 2008-2018, **all** the full-time job growth is allocated to immigrants. Since June 2008 full-time employment among immigrants has increased by almost 400,000. Among the native born there is no increase. This, is not so much an indication that immigrants are increasingly taking jobs from the native born but primarily a reflection of the shifting sources of population growth.

Of course, the immigrant inflow is disproportionately concentrated upon the young and the young are crucial for economic dynamism and economic growth. In this respect Figure 7 is particularly interesting. It presents, since 1991, overseas and Australian born male full-time job growth for those 20 to 39 years of age. Until the GFC, both lines appeared indistinguishable and new full-time job growth was shared equally among the two groups. But since the GFC there has been a considerable change. The overseas born employment levels have continued to rise and those of the Australian born have fallen. The net result, over the three decades since 1991, is that all the full-time job growth in this age group has gone to the overseas born.

FIGURE 7
Growth Full-time Jobs: Males, Australian (AU) Born and Overseas (OS) Born, 20-39 Year Olds 1991-2018 (in thousands)



Data Source: Australian Bureau of Statistics, Labour Force, Australia, LM5, 6291.0.55.001, May 2017

This is a remarkable outcome. One wonders how much economic growth in aggregate, and per capita, would have slowed over the three decades if the immigration inflows had not provided this source of additional full-time young workers.⁴

To conclude where I began. There is a research downside to being a country on the periphery. The tendency in Australia is for the research community to duplicate US research and not respond to local issues. But the Australian research frontier should not be the US research

⁴ Similar job growth patterns are found among native and overseas born women who are employed full-time.

frontier. Our differences stem largely from the very high quality of our immigrant inflows compared to the US and the very large immigrant share of our population.

QUESTIONS & ANSWERS

Question:

Chengfang Liu, Peking University in China: I enjoyed this panel a lot. So speaking of technology I was wondering what you think would be the impact of artificial intelligence on immigration. For example, in China in those industrial areas, there's observation that some factories replace workers with robots and there's even a discussion in China whether we should collect a tax on these robots. So I would like to hear your opinion. Thank you very much.

Answer:

Jason Potts: So there's two ways of looking at this. One is this whole sort of technology labor market, how will robots affect jobs sort of thing and I think the immigration side of that is just one aspect of a much broader thing because this is also happening inside economies as well in terms of labor capital substitution.

That one, this is sort of a hard one to try and figure out but what looks like is sort of shaping up in this space is there's not straight labor capital substitution, that the robots will take our jobs away and will substitute for low skilled labor. What seems to be happening is essentially new types of jobs in which people are working with machines, and the relevant skill space here is working with machines, to create increased productivity. So there's that whole question right. Immigration is one part of that story.

The other part that I also think is interesting is AI for screening. So immigration is basically a decision process where a bunch of information is presented to a thing that makes a decision and usually that thing is a person with a checklist going through, checking and verifying. You know, in the same way that medical diagnostics are like that.

So this potential of AI basically doing the screening I think is actually just as interesting because that could be a lot faster. And we see the same thing happening at borders with movement of goods and services and screening cargoes of whatever. The more that process can be sped up all sorts of resources can move across borders much more quickly, including humans in that respect. So I do think the screening aspect of this is just as significant.

Question:

James Roumasset, University of Hawaii: I guess this is a thought experiment for Dan. Suppose you knew that 80 percent of the people who wanted to immigrate to the US would increase the welfare of current residents and 20 percent would make it worse. But prohibition would be ineffective for two reasons. First of all, we keep out most of the 80 percent. Second of all, prohibition is difficult to enforce because you're increasing the wedge between US and foreign wages and thereby incentivizing more and more innovative attempts at evasion.

So wouldn't it follow that the optimal policy would be "high-fence/wide-gate"? That gives you more effective border security (by whatever enforcement technology) and a better selection system for legal immigrants (e.g. Canada's point system). Does the high-fence/wide-gate metaphor (better enforcement and more legal immigration) make sense?

Answers:

Robert Gregory: To go back to this tension between the economic literature and Australian immigration outcomes. I am not sure that the income of a current immigrant to Australia will increase substantially over their life time, relative to their counterfactual income if they had stayed in their home country. In the US literature the overwhelming impression is that the relative income gap for the potential immigrant is very large. As a result, it is usual to conjecture that world welfare and income levels would increase a lot if there were more immigrant flows to the US.

But our current immigrants would probably earn well above average income back home and marginally above average income here and the income gap between the two counterfactual life-time incomes - one associated with migration and one associated with staying at home - may not be that large. I am focussing on the last decade when increasingly our immigrants are potentially very high income earners in their home country. And although looking ahead and guessing about average income growth over the life-time of current immigrants is clearly a wild guess I would argue that the evidence for my proposition seems very clear. Consider for example, those who come to Australia in the first instance as students. This immigrant group needs to have considerable sums of money to pay for their education. To access these sums of money they have to come from well-to-do families whose children you would expect to earn high incomes. Most of our current PhD students from China who accept employment in Australia are probably giving up a job back home that will pay them more, in real terms, over their life-time. So, for us, the traditional model, which emphasises a large income gap between what could be earned at home and what could be earned in Australia is increasingly not the best model. The reasons for immigration now go well beyond a simple calculation of income gaps.

It seems to me that the typical US immigrant economic model is still thinking about “send us your huddled masses” as it were. The US takes the low paid from Mexico, South America, and other countries where immigrants clearly gain a lot of income by moving to the US.

Jason Potts: But I would see that issue as being much more focussed on things like occupational licensing or essentially the way in which people can move certifications between countries because often when you've got a high skilled person in one country immigrating in, the main barrier they face is that their qualification isn't recognized.

Robert: Gregory: That's true. That is an issue. How large it is in the overall situation I am not sure.

Jason Potts: Yes, and so maybe that's the one we need to investigate in the sense of a kind of well now you have to prove yourself or we suspend judgement. At the moment what we do is just make you resit all the exams which usually basically adds another \$100,000 and three years to the time line.

Robert Gregory: My guess is that the student will do better by coming young and investing in their qualification here than getting the qualification back home and then coming. But, for the Chinese at least, after becoming qualified in Australia, it is not at all clear to me that staying here, rather than going home, will generate more life-time income for them. I know little about immigration from India, which is currently near to our largest inflow group, but I suspect similar considerations apply.

Daniel McFadden: One thing to keep in mind is that if an economy uses a resource that faces import barriers, an obvious response is to export complementary resources. So if there are barriers to immigration as a response to the incentives of factor price equalization, this should encourage reverse migration of physical and knowledge capital, particularly technology and entrepreneurial skills, to locations with lower relative wages.

Orley suggests that the way to deal with the worst of the world's refugee problems is to facilitate resource flows to the refugees' current locations. This makes economic sense. However, suppose you go to the Gaza Strip or to the camps in Jordan, and say "You and your children are going to live here a long time. Let's start building schools and factories, and provide you with infrastructure." The response is likely to be "We will resist steps that make this refugee camp permanent. We're not giving up on returning to our homeland." I don't believe there is an economic solution to this impasse.

Question:

Morris Altman, Newcastle Business School, University of Newcastle: Just two general questions, one with regards to Australia, you run a counterfactual with the immigrations that we have coming into Australia have increased the unemployment rate amongst those groups that the immigrants, even though higher human capital immigrants, have on your economy. So you have a bunch of people who are more highly educated, they're going to go into a certain job pool or job market. Have they actually increased counterfactually the unemployment rate amongst that sub-set of individuals?

Just another very quick question, Arthur Lewis, a long time ago wrote that he understood why workers in the United States feared immigrants, and that was in the 1910's, because he argued they could smash the labor market. But I'm wondering, how do institutions fit into this? In other words, if it's easy to unionise or if you have strong minimum wage legislation, how would that impact on the story of unemployment and on wages?

Answers:

Robert Gregory: Yes institutions do matter and Australian institutions make it easy for immigrant to do well. But the relevant macro counterfactual in my mind is that if Australia increases immigrant flows by 100,000 what does that do to aggregate job growth at the macro level? People fight over the answer to this question. Perhaps an additional 100,000 immigrants create more jobs than they take. After all they need houses, infrastructure and create demand in all sorts of ways. But one of the reasons I think people fight over the immigrant job multiplier is that it's much of a muchness – that is, the employment effects of additional immigrants well may be neutral, even in the short run. I'm on the side, however, which judges, in general, that immigration is a positive macro force in the short run, even though the Australian government often thinks the opposite, which is why when the unemployment rate begins to increase they cut back on immigrant inflows.

The reason I think of immigration as a positive force is that if Australia receives an extra million people they have to live somewhere – adding to housing demand – they have to buy furniture, spend money to travel to work, and generally spend money across the board and add to demand. It is probably in my view that the demand effects are at least equal to the supply effects.

So, in my opinion, one of the reasons why Australia, missed the very adverse effects of the GFC was the strong immigrant inflow. The Australian current housing boom, and all the job creation associated with that, is being generated by two forces; one is a worldwide influence of low interest rates, and the other is that Australia has more people than expected and therefore needs more houses than expected. So, for Australia, I judge that the immigration inflows have been a positive macro-economic force. If we had cut immigration in 2007 I think our growth over the last decade, per capita, would have been lower. But then that's a very contestable statement I suppose. But that's my best judgement.

Orley Ashenfelter: I think your question is if there's increased labor supply and wages are inflexible doesn't that mean there will be more unemployment? And taken at face value, given your assumptions, I think, there is some potential for increased unemployment from immigration. But what actually happens depends on where you are geographically. If we take the US as an example, the vast majority of low wage workers are not paid at the minimum wage. They are paid above it. So instead of this increase in labor supply having an effect on unemployment it would probably have an effect on wage rates. How much is a question that depends on the elasticity of demand. Most people think elasticities are large enough that immigration effects are not large.

The second point is that even when there are effective minimum wages it's rarely the case that there's full coverage. So, for example, shopkeepers set up shops that have long hours, people work long hours, but they're self-employed and that's a way around a binding minimum wage. And of course there's the third way, which is people who work off the books. That in the US is extremely common and I'd be shocked if it didn't happen in Australia too. So in a way unemployment is not the problem, it's more that there could be, there may not be, but there could be, downward pressure on wage rates depending on what skill group these immigrants are from.

Let me make one other comment about Dan's comment. You saw the picture of the refugee camp. That's not a new refugee camp. I think realistically these refugee camps are already cities and those people are not going home. So the real issue is are you going to pretend that they're going home, which is what everybody wants to do, or are you going to start acting as if this was a problem that has to be solved on a broader basis.

Because these people are having children, I mean an entire generation of people are growing up, over 10 million people, in refugee camps around the world. They have to have some way to get out eventually, presumably. They can have their own mobility. I think it just isn't realistic to think that they're going back to their places of origin. It's a sad story but it's an aspect of immigration that economists are not very well equipped to deal with.

On the other hand we have dealt with it before after World War II and I don't really know that there's been much research on what happened. I'm thinking here of an analysis of the UN High Command in 1950. Somehow we dealt with all of the millions of refugees back then. Hopefully this is not a permanent problem. Anyway I just wanted to remark about that. I'm not as optimistic that we are ever going to have a solution that's going to permit these people to return home.

Question:

Valentin Zelenyuk, University of Queensland: Thank you very much for very interesting views and discussion. I have a question maybe to all but mainly for Dan McFadden and maybe also for Orley Ashenfelter.

Dan, you mentioned this famous study by the David Card about Miami immigration, natural experiment done by basically the former Cuban president. This is a wonderful paper by the way, but you know that recently the debate re-emerged about the accuracy of the results in that paper by several people and most notably by George Borjas (Borjas 2016). His NBER papers, I think two at least, where there is an argument that there is some mismatching of the skills that were compared in that original paper. And then there are a few other papers. So the debate re-emerged.

So I wonder what your opinion on that is and how that maybe relates to the also more recent re-emergence of the general debate on immigration and the Trump campaign and the actions of the government currently in the United States. Thank you.

Answers:

Daniel McFadden: My reading of the exchanges between Borjas and Card is that while questions remain on the depth and duration of impacts, Card's overall conclusion holds up that after a few years an immigrant labor force largely creates its own jobs and pays its own way. This is not a zero-sum game between immigrant workers and native workers. In most cases, I think barring immigrant workers is inferior to an economic policy of facilitating integration of immigrant workers and providing temporary support to displaced domestic workers as they adjust. Let me turn things over to Orley since you addressed the question to the two of us.

Orley Ashenfelter: One of the strangest things about Trump and immigration, and I'd encourage you to look at this, is that the immigration from Mexico is actually negative now. We don't have people coming. We have more going away than coming in. It's never been true that most Mexican migrants wanted to stay in the US. They wanted to earn a substantial living and then go back home.

One place where you can see this very effectively is on a website set up by a colleague of mine in the Sociology Department at Princeton, Douglas Massey. It has been a 35 year project. It's called MMP, Mexican Migration Project. I often recommend his web site to students and others, either to write papers or to better inform themselves of the facts.

Doug speaks Spanish and he works with Spanish speaking colleagues in Mexico. What they have done is to set up posts throughout Mexico to keep track of the migration from Mexico to the US, and in both directions. Mexicans migrating from the US are not a legal issue in Mexico, nor is Mexican migration to Mexico. So the sensitivity of questions about migration is much reduced.

He has a remarkable video that you can watch basically showing people moving, showing how in the 1970's it was a massive migration from Mexico into California. That then comes to an end and different parts of the border get used for migration. But actually now it's the other way round.

So it's kind of ironic. And perhaps it is true in general that myths create a conventional wisdom that creates public policy long after that public policy is no longer relevant. Trump's policies are an example of that. He's capitalised on something which, if you were going to be concerned about it, you should have been concerned about it 20 years ago.

And now the second question is about the Mariel boatlift paper. There's always been a concern about that paper by the way. Others have mentioned, and this is not very complicated, if labor supply is very elastic to an area then adding labor to it will not decrease wages by much. So let's say we have an area and the labor market is in equilibrium. Everyone moves around within this labor market. There's some aggregate demand and there's some aggregate supply. The demand and supply sets a wage and then everybody is perfectly elastically supplied at that wage.

Say, for example, the market is really Florida, well then dumping the number of people who came into Miami in the Mariel Boatlift into the Florida labor market would have an effect on the wage rate in Florida but it would be much, much smaller than if there were no migration between Miami and the rest of Florida. So there's always been this question of whether you should really expect much of an effect. If there's substantial migration, if labor supply is very

elastic, the Mariel boatlift is not a very big effect on the US economy. So that's an issue. Larry Katz I think first brought that up, but it's classic labor economics. It depends on whether you think there is mobility.

Now it turns out inside the US, mobility actually has declined. If you look at anything related to cross-regional mobility you will find it has declined continuously for the last 40 years. So there's more concern actually now I think about what the Mariel Boatlift would do than then. And then there's the second issue about this.

There's a second issue though which is the actual empirical analysis itself and I've not followed the details of the various papers commenting on this.

Let me just make one further comment. The Mariel Boatlift is one example of a natural experiment. It's really a horrific one in some ways. But there are others. For example, in California there's the end of the Bracero Program which basically shut down migration. So it's the reverse. Instead of people coming in, it reduced the number coming in.

And there are a number of other examples that I think probably deserve study. So the fixation on one example always bothers me. These other examples seem like they would be worth studying in order to gather enough cases so that we could make a broader conclusion. As to the particular question you asked, maybe Dan here knows more about it but I haven't tried to follow it.

Daniel McFadden: I have quite a bit of contact and experience with the construction and agriculture labor markets in California, which essentially function using Mexican labor. Many in this workforce lack complete documentation. Traditionally, these workers took December and January off and went to Mexico for holiday to visit their families. While this wasn't as simple as booking a flight on an airline, there were established routes across the border that these workers would use for their holiday travel.

In the last few years this easy but unofficial border crossing has been shut down, trapping these workers in California unless they choose to leave permanently. I point this out because I think that when we talk about what's happening to the number of illegal immigrants coming in, how often are they caught and so forth, what's not being tracked is the back and forth of re-immigration. It's quite important to account for that and its effects.

Robert Gregory: Yes. I want to comment on that too. I began to become interested in immigration maybe five or six years ago when it was obvious to me that the current immigration inflows would probably prove to be unsustainable politically, or at least immigration would move to the front of the political agenda. One of the things I found really disappointing, as I read the immigrant literature, is that most of the literature is based on the analysis of stocks. Analysts take the census, or a large survey, to analyse what is happening to the immigrants who live in the country. There's hardly anything on the flows – that is how does a change in immigration flows impact on the macro economy. It is not that the flows are completely ignored, and the more modern literature tends to be more interested in inflows (see the Mariel boat lift for example). It is just that it is the outcomes for the stock of immigrant that have attracted most attention rather than changing composition of immigrant inflows and outflows and how they impact on the economy and how they have been changing over time..

Integrating the inflow and stock data in any analysis should be easy in the sense that all the data exists within government. But it's really hard to get it out. So, partly as a result, you kind of get the same situation that Orley is stressing, which is important. Everybody can be worried about immigration flows but the worry is really being generated by changing attitudes towards the stocks of immigrants rather than the flows. In fact the size of an immigrant group can be

declining the same time the political forces, focussing on the stocks, become increasingly worried about immigration and attempt to restrict inflows.

We have an interesting stock-flow issue in Australia with New Zealanders. New Zealanders can come and go with very few restrictions. Australia can be tightening up in one area of immigration and have it completely offset — in terms of changes in the stock of overseas born in Australia — because New Zealand inflows increase or New Zealand outflows reduce. We can have New Zealanders going back home to and reducing the stock of overseas workers, while other immigrant inflows, subject to visas, are increasing. So focussing on the flows, as well as the stocks, is important. And flows are under-emphasized.

The other point I want to make is that the analytical issues surrounding the Mariel boatlift paper – local labor market responses to outside generated shocks - has suddenly become a big topic outside of the immigration area. For those interested in international; trade you may have picked up on the Autor, Dorn and Hanson, paper on the impact of Chinese imports on US regional labor markets (Autor 2013). One of their major findings is the shock of increased Chinese imports, reducing local employment, does not appear to significantly reduce the local population even though there is substantial job loss. There does not appear to be an increase in population outflows. They also seem to indicate very minimal wage adjustments to the shock – most of the impact is felt in the reduced stock of jobs.

And so this question about how the outflows and inflows of immigrants vary as the economy changes is becoming increasingly interesting. How many temporary or permanent immigrants leave when economic conditions in Australia deteriorate may be just as important as how many immigrant inflow. So the boatlift story, and the issues it addresses, is coming back strongly in the context of trade shocks.

Orley Ashenfelter: There's one more comment about this Trump business. There is a kind of a tragic problem and I don't know how the congress is going to resolve it. There are 800,000 people documented in the US who were brought by their parents when they were minors. So they were not people who themselves chose to move. They are an odd example of push migration, as are refugees. These young people weren't working; they were children. They're now grown up. Some people call them dreamers. I just say they're really Americans. They weren't born in the US. They were brought by their parents. And they are now in a kind of a state of limbo and I don't know what will happen to them.

It's a kind of a political tragedy. It seems there should be some permanent solution where these people have a path to citizenship.

And Dan's point is absolutely correct. It is still common for people with documentation to move back and forth across the Mexican border. But it used to be common that people who were undocumented would do so also. But now the situation is if you depart you really are at great risk regarding whether you can get back into the US. And of course the source of the problem is just this vast difference in wage rates across the border.

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ROUNDTABLE DISCUSSION ON IMMIGRATION

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