

REPLY TO HARRY CLARKE ON THE ECONOMIC EFFECTS OF SKILLED IMMIGRATION

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INTRODUCTION

Rather than a comment on the detail of my paper, much of Clarke's piece is a vehicle for him to state his opinion, clearly strongly held, that 'skilled migration intakes are likely to provide long-term net economic benefits for incumbent Australians'. He appears to be reacting to a misapprehension that my paper seeks to convince readers of the opposite. As a result, much of Clarke's comment is ultimately directed at something other than the content of my paper.

The aim of my paper is to make an original contribution on how certain aspects of skilled immigration might affect the Australian economy. One senses from Clarke's comment that he believes such research is not worthwhile, since all the answers are already known. I begin below by summarising my paper, and repeating the appropriate conclusions to draw from it. I then deal with those of Clarke's comments that relate to my paper. Each of these comments misinterpret my paper and contain basic mistakes. I then consider a part of Clarke's comment that relates only indirectly to my paper. In particular, to support his position that skilled immigration must improve incumbent welfare, Clarke presents only one, somewhat vague, argument. He does not present original research to support the argument, but cites four papers. In my view, these papers provide questionable support for the particular argument he makes.

SUMMARY OF MY PAPER

My paper¹ investigates the impact on the

Australian economy of a hypothetical 50 per cent increase in the skilled migrant intake over the period 2005–2025. One advantage claimed for a skilled migration program is that it increases labour 'productivity' because (by design) it lifts the average skill level of the (post-migration) labour force. To properly model this 'skill effect', a high level of skill detail is required. Hence, my paper uses a model that distinguishes 64 skill categories via cross-classified qualification fields and levels. The hypothetical expanded migration program increases labour supply to all 64 skill categories, but with a weighting towards expanded labour supply to qualification levels such as post graduate degrees, bachelor degrees and advanced diplomas.

The skill effect proves small. By 2025 the program increases raw hours of employment by 4.6 per cent, relative to the no-policy-change basecase. However the deviation in wagebill-weighted employment is only slightly higher, at 4.9 per cent. In a sense, the small size of the skill effect does not come as a surprise. Firstly, a skilled migration program is not simply about encouraging immigration of PhDs. While such a program may target applicants with high skills, the skill levels of primary applicants' spouses, family members, and in time, children, shift the skill composition of the skilled migrant intake towards that of the basecase population. Secondly, by promoting the supply of labour to more highly skilled occupations, the program reduces the relative wages of these occupations. Since the skill effect is small, the paper argues

that the program should be viewed as mainly impacting on the scale of the economy: broadly, the economy expands in proportion with the skilled immigration intake.

The expansion in the size of the economy has a small effect on average incumbent income. For the first sixteen years of the policy, average incumbent income is higher by approximately \$60 per annum. This is the net effect of two countervailing factors. The immigration program increases income from capital and land. However it reduces wages. Eventually average wage losses exceed average capital income gains. Hence, by 2025, per-capita incumbent income is approximately \$77 below basecase. Overall, the policy's net impact on average incumbent income is small. However, there are changes in income distribution underlying the small movement in average income. Broadly, incumbent workers lose from the policy, while incumbent capital owners gain. Losses are likely to be greatest for young incumbent workers holding skills targeted by the migration program. Gains are likely to be greatest for incumbents in their years of peak net capital ownership, namely, the pre-retirement years of 55–64.

The fall in the wage (relative to basecase) is due largely to a fall in the terms of trade (again, relative to basecase). The increase in skilled migration causes the economy to be larger. A larger economy requires more imports, both for consumption purposes and for input to production and capital formation. These imports must be paid for with foreign currency. This requires an expansion in exports. To induce foreigners to buy more of our exports, we must lower our export prices. That is, the terms of trade (the ratio of our export prices to our import prices) must fall. This reduces national income, since the country's capacity to purchase imports with a given quantity of exports is

reduced. This loss is borne by the primary factor that is in long-run fixed supply, labour. The loss is expressed as a reduction (relative to basecase) in the price of labour, the real wage.

The paper makes a number of conclusions. First, the program can be usefully viewed as being mostly about the size of the economy: there is a skill effect, but it is small relative to the effect of the program on labour supply in general. If policy makers see the absolute size of the economy as a worthwhile policy goal, skilled migration is one instrument for achieving this goal. Secondly, the policy has little impact on the average per-capita incomes of incumbents. Third, the policy changes the distribution of income, favouring capital over labour, the old over the young, and the unskilled over the skilled. The paper investigates two of the many conduits via which skilled migration might affect the domestic economy: expansion of skilled labour supply, and (*ceteris paribus*) increased net foreign assets via asset holdings of immigrants at time of arrival. As in most pieces of research, there are numerous factors which we know might also be important, but which are held constant for the modelling exercise at hand. My paper highlighted a number of such factors which I think bear most directly on my results.

CLARKE'S COMMENTS RELATING TO MY PAPER

Clarke opens by saying that I '[claim] that increasing Australia's immigration program would disadvantage incumbent Australians'. I make no such strong claim. Firstly, the paper deals with skilled immigration, not the immigration program as a whole. Secondly, the paper is limited to two aspects of the skilled immigration program (skills and assets), holding all other aspects constant. Hence my research does not allow one to draw sweeping conclusions

about the desirability or otherwise of Australia's immigration program. Among my conclusions on page 61 is: 'The impact of the policy on average incumbent income is small, averaging an annual \$37 per capita over the study period'.

In paragraph 5 Clarke states 'What does drive the Giesecke result? It is difficult to pin down given the complexity of the MONASH modelling ...' This rhetorical flourish is disappointing. Clarke attempts to muddy the waters by implying that the complexity of MONASH creates some mystery about what economic mechanisms drive my results. Readers of the paper will see that I have carefully explained the modelling in such a way that only knowledge of undergraduate economics is required to understand the results. Clarke continues 'but the effects of immigration in worsening current account deficits and thereby driving unfavourable terms of trade effects seems to be a part of the Giesecke explanation'.

This is incorrect. Pages 56–57 of my paper carefully explain the cause of the terms of trade result. The implications of the decline in terms of trade for wages, consumption and income are discussed throughout the paper. The mechanism responsible for lower terms of trade is not, as Clarke describes it, 'immigration worsening current account deficits and thereby driving unfavourable terms of trade effects'. Indeed, *ceteris paribus*, we would normally expect a worsening current account deficit to improve the terms of trade, not lower them as Clarke suggests. As pages 56–57 explain, the correct mechanism is via the size of the economy: a larger economy requires larger exports, to expand our exports, we must lower export prices.

Clarke states that the terms of trade result is not 'plausible'. He says: 'Australia has only limited capacity to set prices in the markets for its major exports—for the

most part we are close to being price-takers in such markets'. This 'small country' assumption is often used in simple textbook models. The argument is that an individual economy is a small share of the global economy, and so cannot influence world prices. This assumption can be useful for some pedagogic purposes, but is wrong for real world policy analysis. Australia has some market power in foreign markets for the Australian versions of the goods we export. It might be true that the decisions of Australian wine exporters can have little effect on average global wine prices, but an expansion in Australian wine exports will require a fall in the prices of Australian wines in foreign markets.

All large-scale applied economic models of Australia, used for practical policy analysis, recognise the point that Australia has pricing power in the foreign markets for our products. The extent of this pricing power is reflected in the model's 'export demand elasticity'.² The implicit Australian export demand elasticity in the Global Trade Analysis (GTAP)³ model is approximately -4. In the MM model it is approximately -5.0.⁴ In Treasury's TRYM model it is approximately -4.0.⁵ In MONASH it is -4. The range of these elasticities (-4.0 to -5.0) imply that a 4 per cent expansion in exports (the year 2025 result in my paper) will cause a terms of trade decline of between 0.8 per cent (for an elasticity of -5) and 1 per cent (for an elasticity of -4). *Ceteris paribus*, a decline in the terms of trade reduces incumbent real income.

As the conclusions to my paper argued, skilled immigrants might identify new profitable foreign trading opportunities for Australian goods. This could reduce the terms of trade loss. However the existence and extent of such an effect is an empirical question. The policy-relevant research question would probably not be whether skilled immigrants in general identify such

trading opportunities, but whether new arrivals (skilled or otherwise) with particular backgrounds (such as business experience) from particular countries (such as those where Australian import penetration is low) successfully identify such trading opportunities. If future research produces convincing Australian evidence on the existence and extent of this effect, it should be incorporated in future modelling.

Clarke continues with his terms of trade argument thus: 'Most importantly, Australia is a nation of immigrants and if immigration were always to have the effect of driving a secular deterioration in the terms of trade we would now have very low living standards in Australia'. While superficially appealing, this argument makes two simple errors. Firstly, at the same time as Australia's economy has expanded via immigration, the global economy has expanded alongside it. Downward pressure on Australia's terms of trade from domestic growth has been matched by upward pressure on Australia's terms of trade from global growth. Growth in export supply has been approximately matched by growth in export demand. Secondly, there are far more important determinants of Australian living standards than the level of immigration. These did not remain unchanged as Australia's workforce expanded via immigration. In particular, growth in productivity is the major long-run determinant of growth in Australian living standards.

Clarke begins his next paragraph 'Moreover, debt acquired as a consequence of the immigration per se is not a reason to oppose immigration'. This is an odd statement, since no such argument, either explicit or implicit, appears anywhere in my paper. Indeed, there is an implicit argument to the contrary. Figure 11 plots incumbent capital rental income, net of changes in foreign interest payments. This

is positive throughout the simulation, as returns on marginal investments exceed the foreign interest rate.

In paragraph 8 Clarke lists some well-known elements of the contra side of the immigration debate. He talks of the 'Giesecke critique', apparently disappointed that the paper has not considered these negatives, but not recognising that my paper is neither a critique nor concerned (for the most part) with making a research contribution on any of the contra issues he lists. Strangely, among the issues he is disappointed not to find in my paper, are adverse distributional effects. But an important part of my paper does address distributional effects. Distributional effects are discussed over pages 59–60 and again in the conclusions.

CLARKE'S 'GAINS FROM TRADE' ARGUMENT AND HIS FOUR REFERENCES

Clarke argues that skilled immigration will improve incumbent welfare. He states one mechanism via which this might occur. His argument, presented in paragraph 3, appears to be that incumbents gain by having more people with which to trade. It would have been helpful had Clarke presented some quantitative evidence on the magnitude of this effect. Such results could have complemented mine, expanding our understanding of the effects of skilled immigration. The precise mechanism Clarke has in mind is not very clear. Nevertheless, it might be that my paper addresses one element of this 'gains from trade' argument. An important thing traded by skilled immigrants is their skill. In my modelling, the gains from this trade accrue to the skilled immigrants (via their wage) and the incumbent owners of fixed factors (capital in the short-run, land in the long-run). It might be that Clarke has in mind another trade mechanism. Perhaps he thinks consumer preferences of new arriv-

ais differ markedly from those of incumbents. This is not an issue examined in my paper. I would anticipate such preference differences to be small, but it is an open question, worth future examination.

Clarke cites four papers in support of his position that skilled immigration improves incumbent welfare: Berry and Soligo (1969)⁶, Kemp (1993)⁷, Borjas (1995)⁸, and Ottaviano and Peri (2006)⁹. I discuss these papers below. The citations provide scant support for the strong position Clarke takes. Indeed, the careful and extensive literature surveys in these articles are clear on the fact that prior research presents diverse views on immigration's impact on wages, rents and incumbent net income. Clarke asserts that my findings are 'inconsistent with economic theory'. This is a curious allegation. MONASH, the model used in the paper, is built on standard neoclassical economic theory. As such, as I show below, a number of the economic mechanisms discussed in the papers he cites are present in my paper. Importantly, all the papers he cites exclude an important element of the economy, namely, the demand side. Hence none consider the impact of immigration on the terms of trade.

Berry and Soligo (1969) is a seminal paper on the economics of migration. The paper is not, as Clarke suggests, about 'gains from trade'. Berry and Soligo show that in the short-run, with fixed domestically-owned factors, incumbents gain from immigration because the impact of lower wages on incumbent income is more than offset by higher returns on the fixed factor. It is this Berry-Soligo effect that accounts for the short-run gains in incumbent income in my paper. However, as Borjas (see below) notes, incumbent gains in the Berry-Soligo framework are eroded in the long-run case where capital supply is free to adjust to labour supply. This mechanism is also present in my model.

Kemp (1993) is a short theoretical note, arguing a correspondence between two gains-from-trade theorems and gains from immigration. This careful analytical work does not contain strong policy conclusions of the type made by Clarke. In a sense, an aspect of the Kemp mechanism is present in my modelling. In the absence of a theory explaining basecase wage relativities, increasing the supply of workers with above average wage rates, as I do in my paper, can be interpreted as easing an impediment to the international mobility of labour, and encouraging its use where it is most highly valued. My results suggest that the gains from this are small. Moreover, they are dominated by terms of trade effects, which are not considered in Kemp (1993).

The Borjas (1995) paper does not support a strong policy position such as that taken by Clarke. Borjas discusses the positive (that is, analytical) theory of immigration policy. As part of his exposition, he presents a back-of-the-envelope estimate of the short-run Berry-Soligo gains from immigration for the US economy. He estimates the short-run gain to be 'relatively small, about \$7 billion per year or less than \$30 per native-born person'. Assuming these figures are in 1995 dollars, this translates to approximately \$US42 per person in 2006 dollars. This is of the same order of magnitude as the short-run gains reported in my paper, an average \$AUD61 for the first sixteen years of the policy. Borjas goes on to consider the literature valuing the net fiscal consequences of immigration, and notes that there is a wide variance (both positive and negative) in these estimates. He concludes his section on the Berry-Soligo surplus thus: 'Because the immigration surplus is only on the order of \$7 billion, however, it is evident that the net economic benefits from immigration are very small and could even be negative'.

However Borjas goes on to consider the size of the Berry-Soligo surplus under different assumptions about the skill-composition of immigration. He finds that under an assumption in which skilled workers are more complementary¹⁰ with other factors than unskilled workers, then the host country receives a benefit from the admission of skilled immigrants when the capital stock is fixed. The size of this benefit is dependant on the immigrant skill mix differing from that of incumbents. The short-run gain is smallest in the case where the immigrant skill mix is identical to that of incumbents.

Borjas discusses the short-run nature of the Berry-Soligo surplus. Over pages 8–9 he notes that if immigration increases both the labour force and capital stock by the same proportion, then ‘immigration would have no impact on the national income accruing to natives. As long as immigrants replicate the existing economy, therefore, immigrants get the total returns from their product, and the immigration surplus is zero’. This economic theory is present in my paper, with the model tending towards a long-run equilibrium in which expanded capital supply returns capital rental rates back to basecase. This mechanism’s influence on incumbent income is discussed on page 59 of my paper. Note that my model contains an additional effect that is not discussed by Borjas, namely, declining terms of trade.

Borjas (1995) addresses an argument resembling Clarke’s ‘gains from trade’. He is worth quoting at length. Borjas summarises the argument thus: ‘Immigration expands the size of the market. It can introduce many new interactions among workers and firms, so that both workers and firms might “pick up” knowledge without having to pay for it. As a result, even though the production technology at the firm level has constant returns to scale, the external effects

resulting from immigration might lead to increasing returns on the aggregate’. Borjas then summarises the analytics of this theoretical effect, before concluding:

‘Although models that incorporate external effects in the aggregate economy are used frequently in modern discussions of the gains from trade, there is little empirical evidence supporting the existence, let alone measuring the magnitude, of the external effects (for an exception, see Dekle and Eaton, 1994). As a result, the numerical exercise presented here should not be interpreted as indicating that immigrants contribute substantially to the incomes of natives, but rather as giving a ballpark estimate of what the gains would be if immigration indeed generated increasing returns in the aggregate economy. Despite the current popularity of external effect models in the theoretical international trade literature, it is difficult to image that immigrants entering an economy as large as that of the United States could generate these types of externalities. Most likely, immigration would lead to increased congestion and decreasing returns to scale because other factors of production remain fixed’.

Again, it is difficult to see how this paper, cited by Clarke, provides compelling support for his strong position.

A typical modelling assumption is to treat immigrant and incumbent workers as substitutes. The contribution of Ottaviano and Peri (2006) is to present simulation results from a model in which foreign-born and US-born workers are treated as complements. Under the complementarity assumption, immigration can increase incumbent wages. The results in this working paper are intriguing, but as the authors themselves note, are contrary to a large body of literature in which native and foreign labour are treated as substitutes and

the effect of immigration is to depress wages. Among the papers cited by Ottaviano and Peri is further work by Borjas,¹¹ in which he finds that a 10 per cent increase in labour supply reduces average wages by 2.9 per cent. The results of my paper are of a similar order of magnitude: by 2025 a 4.9 per cent increase in effective labour reduces the real wage by 1.7 per cent. As discussed in the conclusions to my paper, I specifically exclude the complementarity case. As the authors note, this case might be a useful way of viewing aspects of the US situation, where 'foreign-born residents are relatively abundant in educational groups in which natives are scarce'. From an Australian policy perspective, this early research is probably best viewed as an encouragement to further our understanding of complementarity possibilities between skilled immigrants and Australian primary factors. If strong Australian evidence for complementarity is found, it should be included in future modelling work.

The four papers cited by Clarke appear, at best, only tangentially related to his strong policy position, and to the content of my paper. None of the papers he cites considers the effects of immigration on the terms of trade. This is not a criticism of these papers, just a recognition that this effect does not form part of their analysis. In my paper, adverse terms of trade outcomes decrease incumbent income. This is not a new finding. For example, the mechanism is present in the work of Parmenter and Peter (1991)¹², Peter (1993)¹³ and Peter and Verikios (1996)¹⁴. Pricing power in foreign markets is recognised by all large-scale models of the Australian economy. Hence, in general, we should be surprised if we do not find this effect present in an economy-wide assessment of the impacts of immigration.

CONCLUSION

Like any economic policy question, skilled immigration is complex. Our understanding of such complex issues is not helped by discursive argumentation or appeals to commonsense. The large literature that exists on any policy topic can normally be trawled for a theory to support any position. Unfortunately, what is often missing in such exercises, is an appreciation of the relative importance of the many countervailing theoretical effects identified in the literature. Knowledge in the social sciences is advanced by original, detailed, careful research.

An important part of such research will be formal work done with large-scale models containing policy-relevant detail. Such models assist researchers to formalise and structure their thinking. Moreover, by providing numerical results, they facilitate rankings of the importance of different theoretical effects. For example, consistent with the work of Parmenter, Peter, Verikios and Borjas, my paper finds that the Berry–Soligo effect is small. Its effect is short-run, and far outweighed by the terms of trade loss. The paper shows that, compared to the general labour expansion effect of skilled immigration, the skill effect is small. My paper qualified its findings by listing factors potentially important to the total economic outcome from skilled immigration, but not considered in the paper, namely returns to scale, technical efficiency, foreign trading opportunities, downward-shifts in the occupations in which skilled immigrants find employment, fiscal transfers and skill complementarity. For policy makers, findings of this sort are valuable, particularly when presented in the context of a flexible numerical model, in which different assumptions and theories can be transparently analysed.

References

- ¹ J. Giesecke, 'Economic impact of a general expansion in skilled migration', *People and Place*, vol. 14, no. 3, 2006, pp. 48–63
- ² This parameter measures the percentage change in export volumes arising from a 1 per cent change in export price. For example, if a 1 per cent rise in Australia's export prices were to cause the rest of the world to reduce its demand for Australian goods by 4 per cent, the export demand elasticity is -4.0.
- ³ T.W. Hertel, *Global Trade Analysis: Modelling and Applications*, Cambridge University Press, Cambridge, 1997
- ⁴ The export demand elasticity for commodity exports is -3.5, and for non-commodity exports it is -9.5, implying an average export elasticity of approximately -5.0. See Powell, A.A. and Murphy, C.W., *Inside a modern macroeconomic model: a guide to the Murphy Model*, Springer-Verlag, Berlin, 1997. p. 205 and p. 213.
- ⁵ TRYM has an export demand elasticity of -2.0 for non-commodity exports, and infinity for commodity exports, implying an average export elasticity of approximately -4.0.
- ⁶ R.A. Berry and R. Soligo, 'Some welfare aspects of international migration', *Journal of Political Economy*, vol. 77, no. 5., 1969, pp. 778–794
- ⁷ M.C. Kemp, 'The welfare gains from international migration', *Keio Economic Studies*, vol. 30, no. 1, 1993, pp. 1–5
- ⁸ G. J. Borjas, 'The economic benefits from immigration', *Journal of Economic Perspectives*, vol. 9, no. 2, 1995, pp. 3–22
- ⁹ G. I. Ottaviano and G. Peri, 'Rethinking the gains from immigration: theory and evidence from the US', *National Bureau of Economic Research Working Paper*, January 2006
- ¹⁰ Rather than compete with domestic primary factors as substitutes, the skills of some new arrivals may complement domestic resources. For example, a skilled immigrant with particular programming skills might find their skills are complementary to both the existing stock of computing capital, and the skills and backgrounds of incumbent computer programmers.
- ¹¹ G.J. Borjas, 'The labour demand curve is downward sloping: reexamining the impact of immigration on the labour market', *The Quarterly Journal of Economics*, 2003, November, pp. 1335–1374
- ¹² B.R. Parmenter and M.W. Peter, 'A reinterpretation of the CIE projections of the long-run economic effects of immigration', *The Economic Record*, no. 67, 1991, pp. 331–337
- ¹³ M.W. Peter, 'The use of the ORANI model in the immigration debate', *People and Place*, vol. 1, no. 2, 1993, pp. 27–34
- ¹⁴ M.W. Peter and G. Verikios, 'The effect of immigration on residents' incomes in Australia: some issues reconsidered', *The Australian Economic Review*, 1996, pp. 171–188