



# An Assessment of the Fiscal Effects of Immigration to the UK

13<sup>th</sup> March 2014



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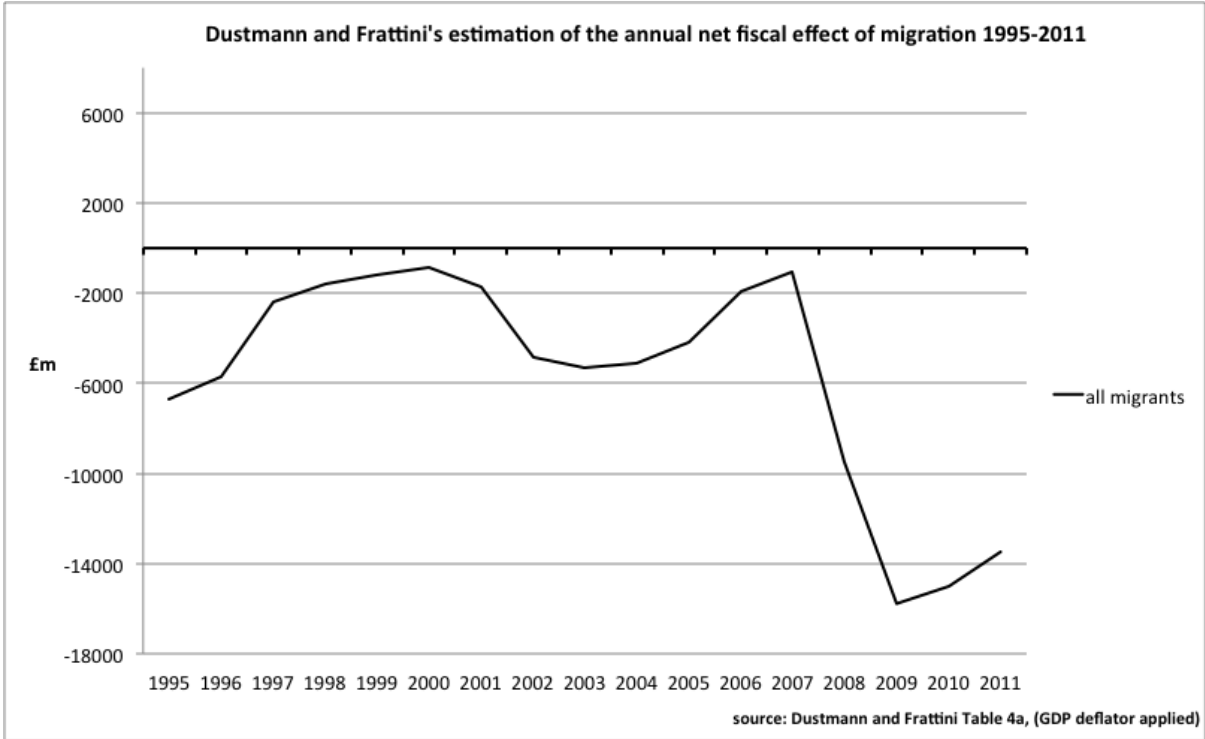
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# Summary

i. The fiscal effect of immigration on the UK exchequer has gained considerable prominence in recent months. The results of all research in this area depend on the method used and on the assumptions underlying them. This paper examines a "discussion paper" issued by the Centre for Research and Analysis of Migration (CReAM) at University College, London. The authors, Dustmann and Frattini, adopted the "average cost" method for their reported results but also calculated an alternative scenario using the "marginal cost" method preferred by some. This paper focuses on the reported results, but we also examine the alternative scenario in Annex A.

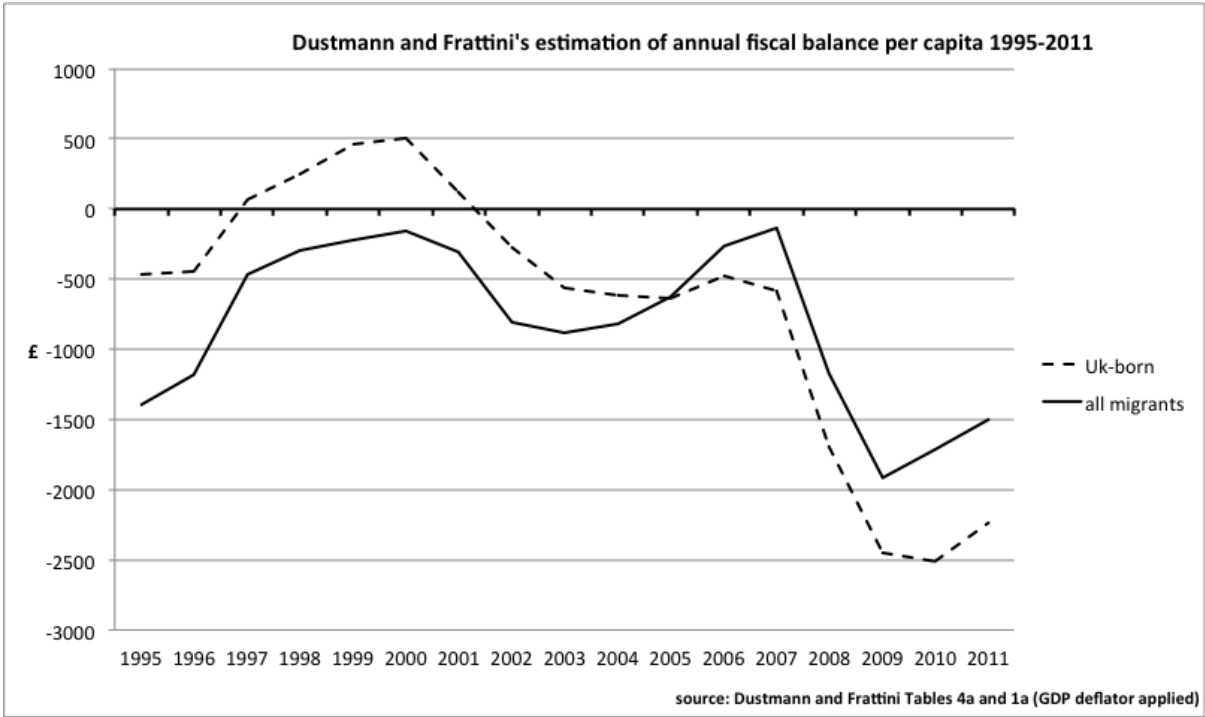
ii. The authors themselves found a fiscal cost to the UK from migrants in the UK of £95 billion between 1995 and 2011. This result can be found only in Table 5 at the end of their paper; the figure is not mentioned in their text and the abstract of their paper makes no mention of any fiscal cost at all. Furthermore, their findings show a net cost every year as illustrated below.

Fig.1



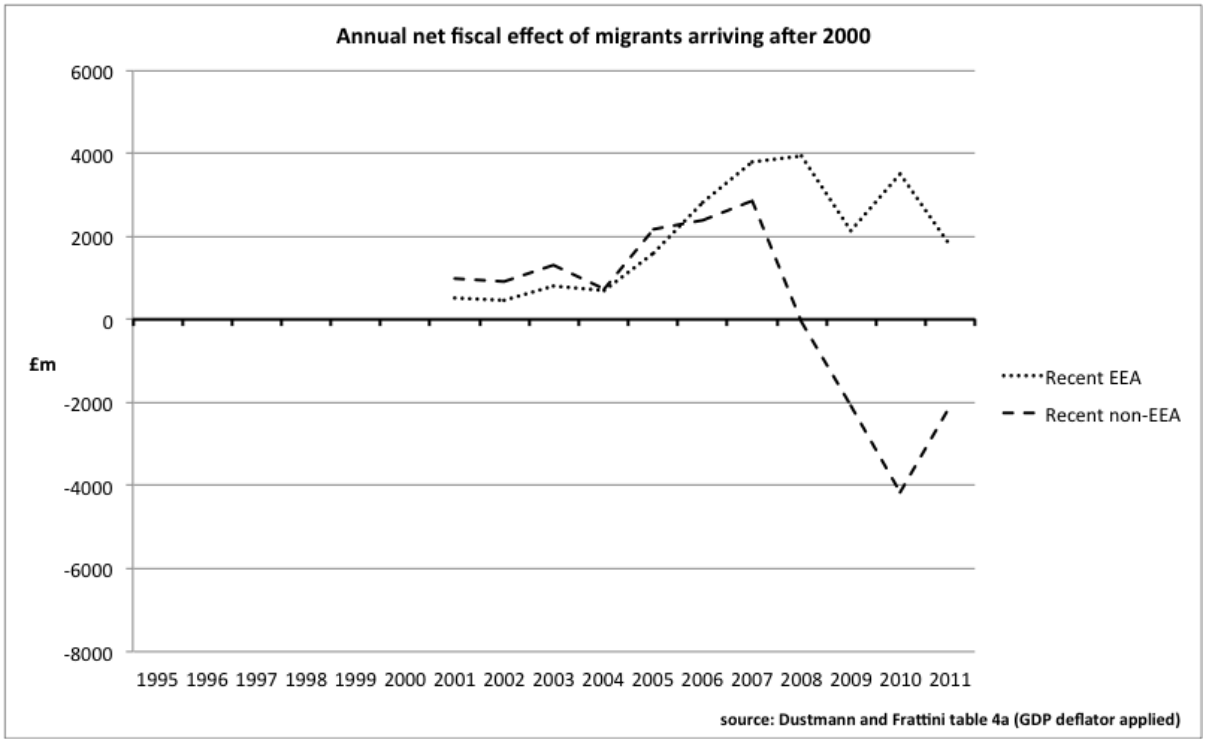
iii. They also found consistently negative net per capita contributions by migrants - even when the UK-born were contributing positively.

Fig.2



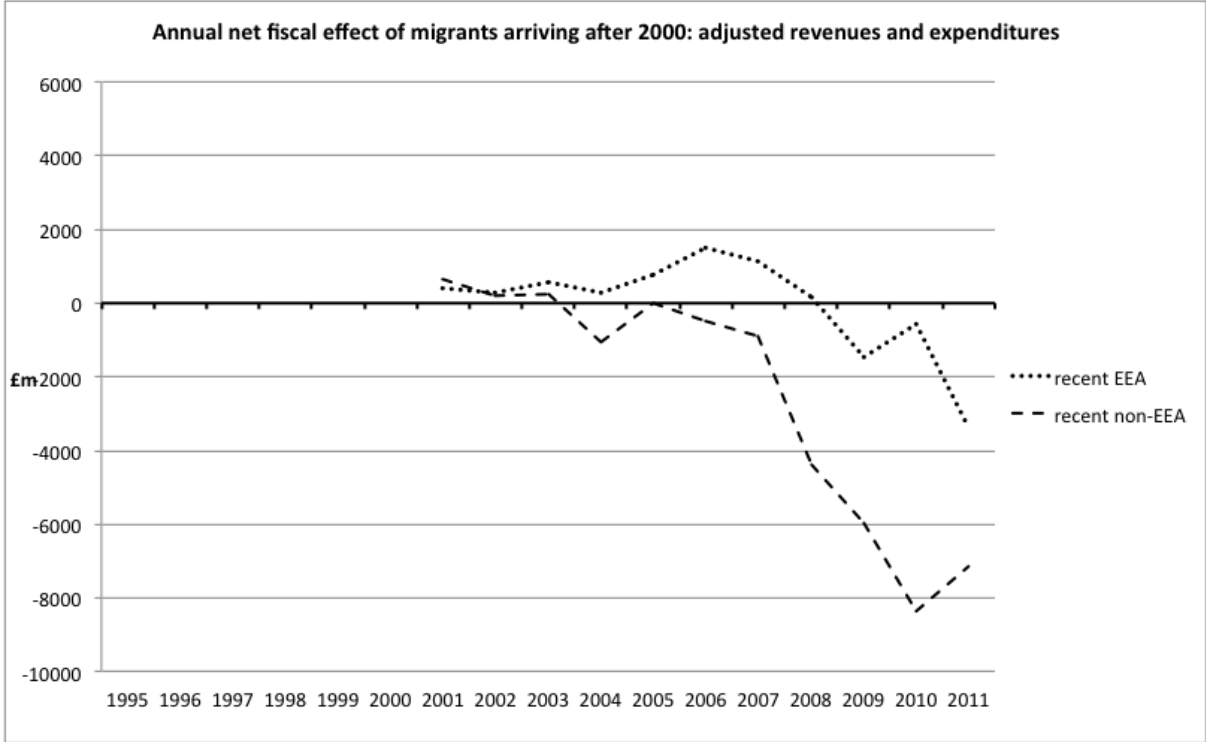
iv. The authors claim that this masks a different and much better performance by recent migrants from both within and outside the EEA.

Fig.3



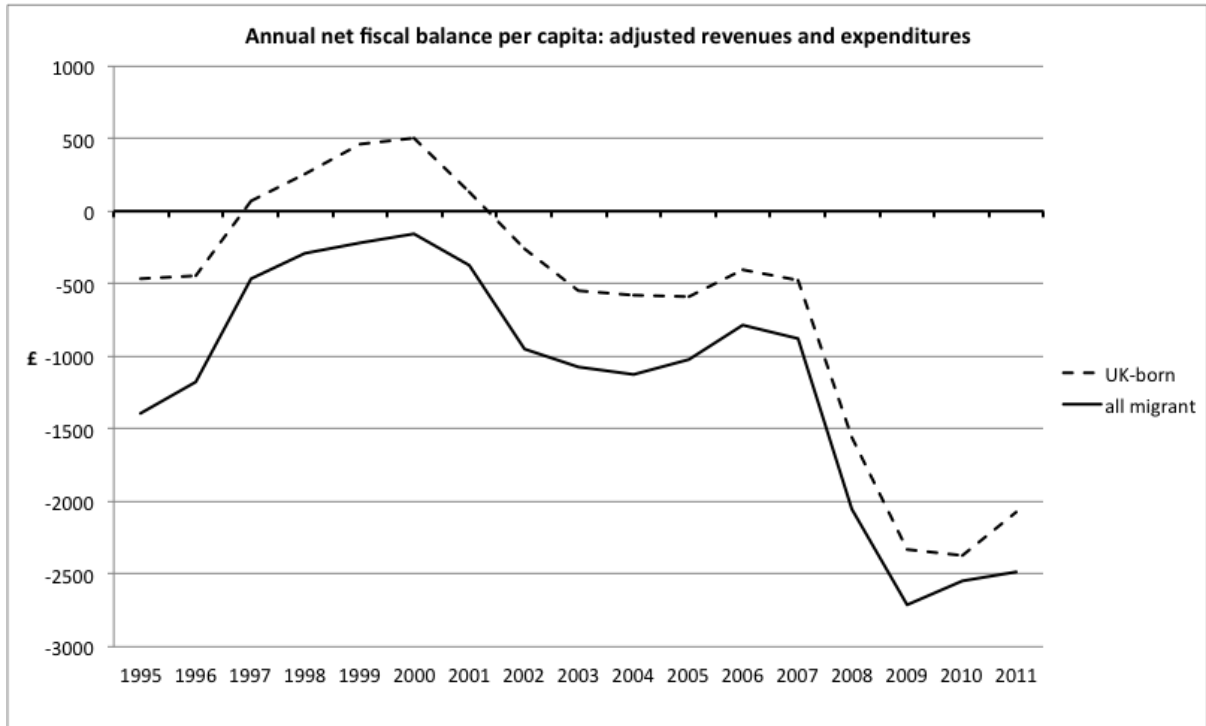
v. This paper from Migration Watch UK makes clear that Dustmann and Frattini have overstated revenues and understated expenditures for these recent migrants, and suggests something quite different when they are adjusted to take account of these, as shown below.

Fig.4



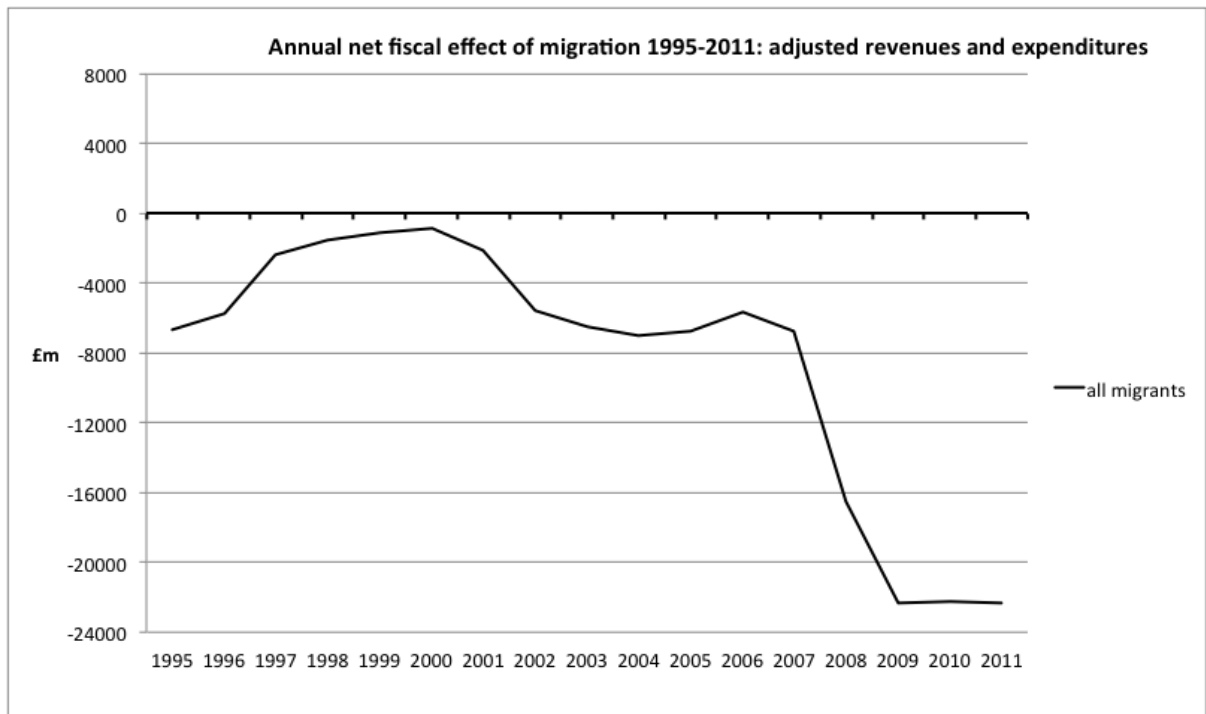
vi. Our adjustments make the contributions by migrants consistently negative as Dustmann and Frattini also found, but worse each year than the contributions made by the UK-born.

Fig.5



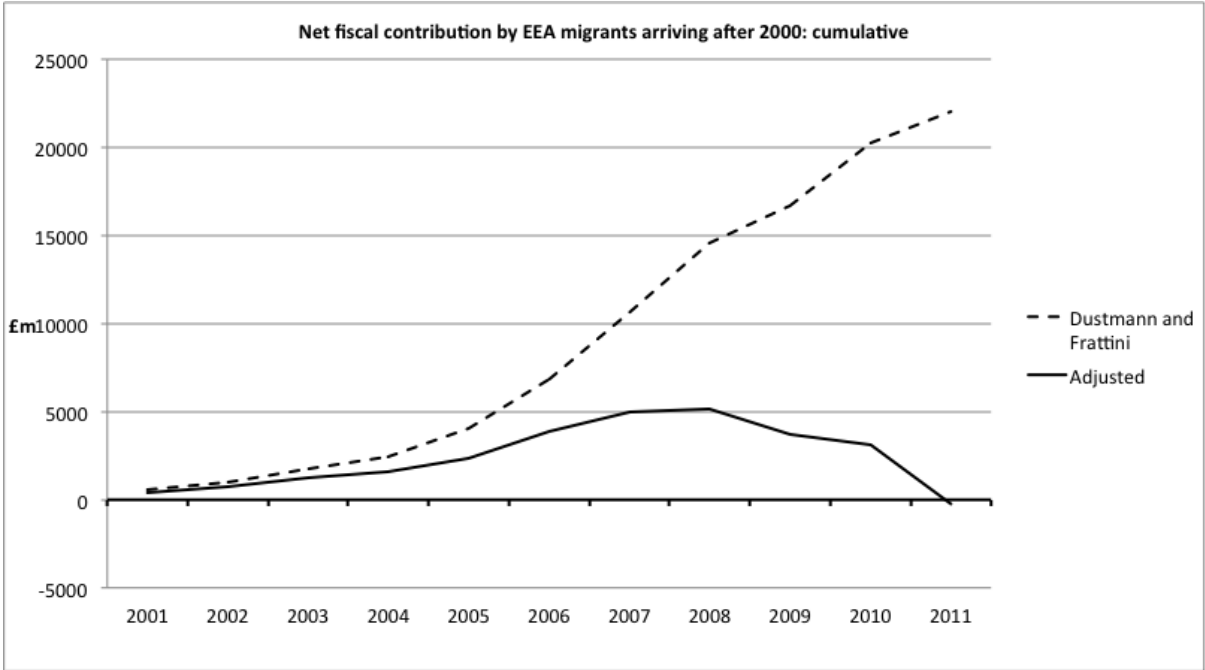
vii. These adjustments suggest that the overall fiscal cost of migration to the UK – assuming that Dustmann and Frattini were otherwise correct - was £148 billion during the period from 1995-2011.

Fig.6



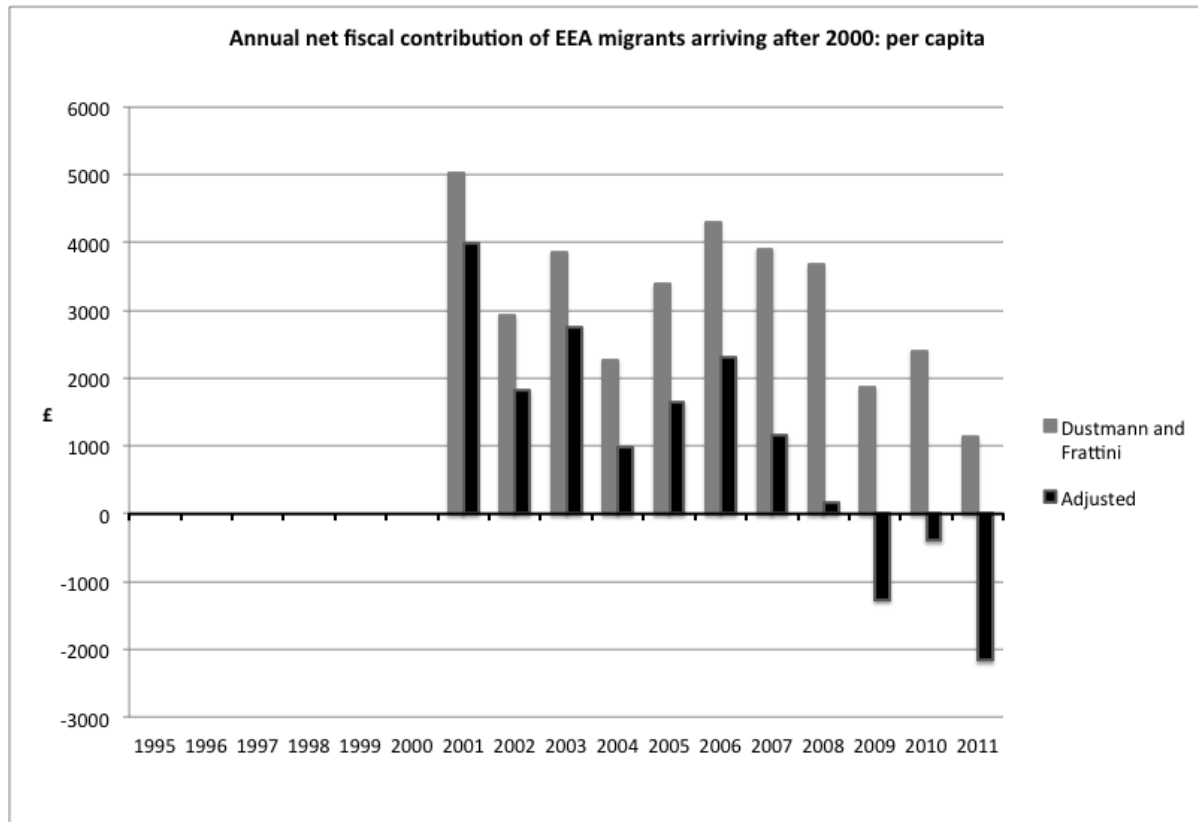
viii. Dustmann and Frattini claimed in particular that between 2001 and 2011 recent EEA migrants contributed to the fiscal system 34% more than they took out, with a net fiscal contribution of £22 billion. We suggest that in fact there was no positive contribution.

Fig.7



ix. Annual per capita contributions show the clear downward trend of Dustmann and Frattini’s findings, and the result of adjustment to take account of their overstatement of revenues and understatement of expenditures.

Fig.8



x. The headline conclusions of their press release have been very widely repeated and publicised, most commonly that for EEA migrants since 2000:

- (a) They contribute 34% more than they receive.
- (b) This amounted to over £20 billion from 2001-2011.
- (c) They are only half as likely to claim state benefits as the general population.

xi. We have found, on examination that:

- (a) The claim that recent EEA migrants contributed 34% more in revenues than they received in state expenditures is simply wrong. It relies on assumptions that employees earn the same as the UK-born population when their own figures show they do not, that self-employed migrants contribute far more than those employed when they have no evidence of this whatsoever and – wholly unrealistically - that all of them own the same investments, property and other assets as the UK-born and long-term residents from the day they arrive in the UK.
- (b) In fact, on less unreasonable assumptions, there was no positive fiscal impact at all from the recent EEA migrant group singled out by Dustmann and Frattini for their “very positive contribution”. Indeed, migration to the UK continues to have a significant fiscal cost, and recent migrants made no difference to the upward trend.
- (c) The claim that recent EEA migrants are only half as likely to claim ‘benefits or tax credits’ is highly misleading. Indeed it is meaningless in the context of establishing the fiscal cost since



what matters is the amount people receive rather than the number of claims made – especially since different benefits pay widely different amounts to different people. Recent EEA migrants are much more likely to receive tax credits than the UK-born population, and more likely to receive housing benefit. Furthermore, these are likely to be paid at higher rates in view of their lower incomes. Typically they will be higher than the out-of-work benefits they are less likely to claim, and the native born more likely, to claim. For example in 2011, typical out-of-work benefits for a couple with two children were around £200 a week, but the same couple in low-paid work with two children could be receiving twice that much as they become entitled to working and child care components of tax credits. Job-seekers Allowance was £67.50 a week but the average housing benefit claim was between £73 and £145 per week.

## Introduction

1. The extensive research on migration to the UK largely relies upon data from previous periods that might well not paint an accurate picture of the present or guide to the future. This applies both to economic data from before the significant reforms of the UK welfare system to focus on encouraging people into work and supporting them in work through tax credits, and to demographic data from before the significant increase in migration following the accession of new EU Member States in 2004.

2. Most research in the UK has been carried out using the essentials of the methodological approach of Gott and Johnston in their 2002 paper for the Home Office. The broad consensus of all of this work is that it is difficult to identify the fiscal impact of immigration. Even studies focussing on the same limited periods have come to different conclusions but most found that based on the data available it appeared to be small but positive overall. It has proved hard to examine the detailed inflows in revenues to governments from migrants and the additional expenditures by government on migrants, although from a theoretical point of view it is clear how that analysis could be undertaken (e.g. Vargas-Silva 2013).

3. The latest comprehensive literature review by the OECD in 2013 found that while the fiscal impact of immigration tended to around zero on average across European OECD countries, in the US, Canada and Australia, immigrants tend to have a less favourable net fiscal position than the native-born, 'almost exclusively driven' by the fact that they contribute on average less in terms of taxes and social security contributions than the native-born and not by a higher dependence on benefits.

4. Gott and Johnston estimated the fiscal effect of migrants for the single year 1999/2000, noting *"this initial analysis is unsophisticated and tentative"* and *"With a bigger programme, over a longer timescale, it should be possible to arrive at more accurate estimates"*. A similar analysis was undertaken over a longer period by Sriskandarajah et al in 2005, but as they note:

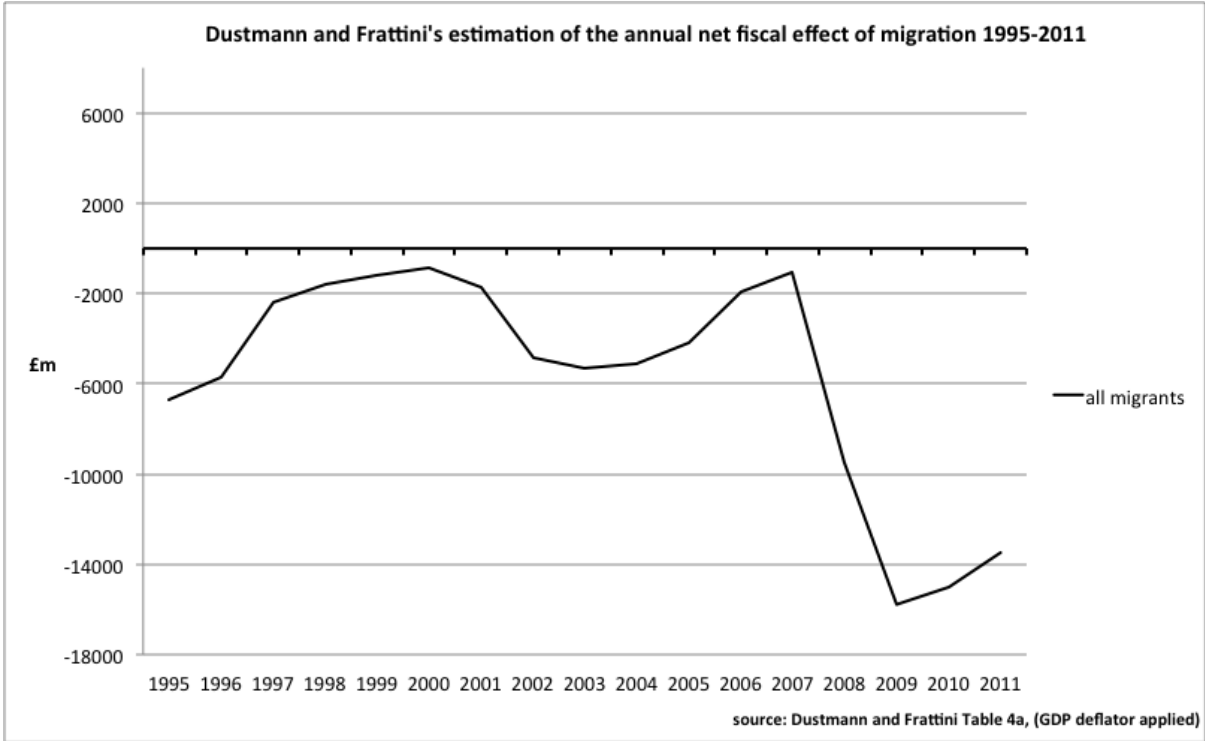
*"In sum, we have opted to extend the reach of the Gott and Johnston analysis to five years, rather than attempt to modify the methodology. We recognise that some improvements can be made to the methodology, but these are beyond the scope of this report. Our purpose is to explore how the situation presented by Gott and Johnston may have changed in the three years since their study was published, whilst understanding that this is only a partial analysis. There remains scope for further work to estimate the fiscal impact of immigration more precisely, as well as the wider economic implications"* (p.6).

# The CReAM paper

5. A recent study by Christian Dustmann and Tommaso Frattini (2013) for the Centre for Research and Analysis of Migration (CReAM) at University College, London has attempted the same task over an even longer timescale but there appears to be nothing tentative about their analysis. Their introduction states "we are able to provide **precise estimates** for each year since 1995 (2001 for recent immigrants) on both the overall expenditure on the respective immigrant populations and the revenues they have produced in comparison to native born workers" (p3 – emphasis added). And they conclude "Overall, our findings draw a positive picture of immigrant contributions, particularly for those immigrants who entered the UK fiscal system since 2000" (p25).

6. However, their own findings in fact show a net fiscal cost from immigration in each year from 1995 to 2011, adding up to nearly £100 billion in 2011 terms, with over £70 billion of this cost accruing since 2000. These are considerable amounts, and largest in recent years.

Fig.9



7. Comparing these findings to the estimates made by previous researchers, they match closely those made by Migration Watch UK in 2006. Rowthorn reported a range of possible outcomes depending on assumptions, suggesting that both favourable and unfavourable adjustments of around £7bn could be made to Sriskandarajah’s findings.

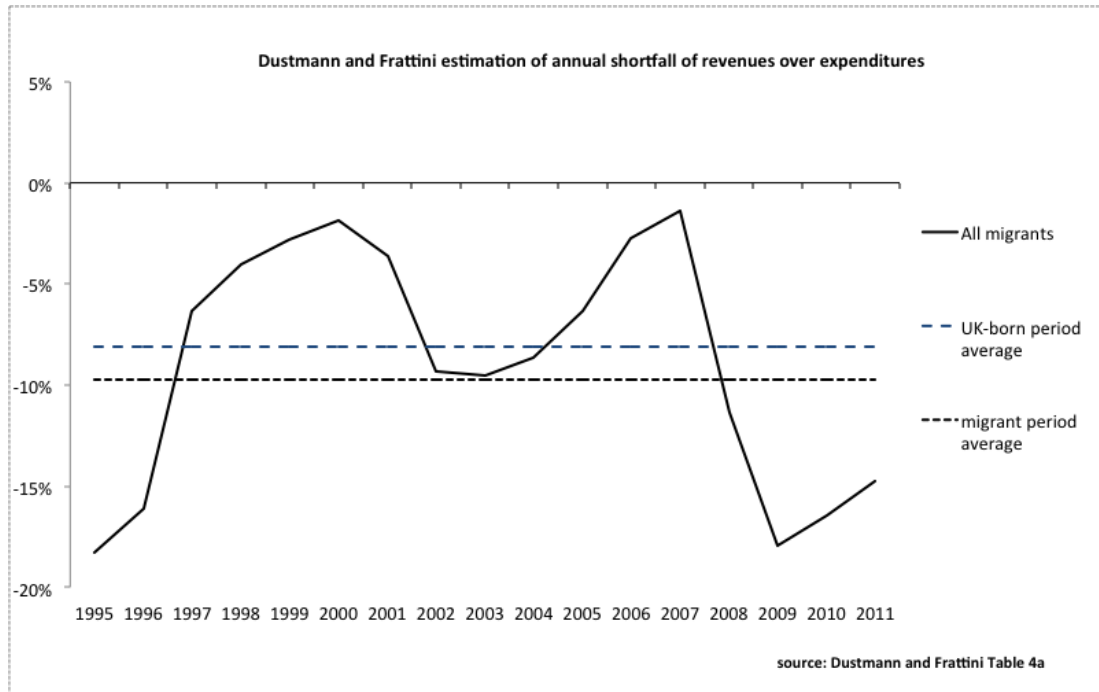
Table 1

<i>Fiscal year/£</i>	Gott and Johnston 2002	Sriskandarajah et al 2005	Migration Watch UK 2006	Rowthorn 2008	Dustmann and Frattini 2013
1999/2000	2.5bn	1.9bn	-1bn/-3.8bn		-0.9bn
2000/2001		1.7bn			-0.6bn
2001/2002		1.8bn			-1.3bn
2002/2003		-0.1bn			-3.8bn
2003/2004		-0.4bn	-5bn	0.6bn	-4.3bn
<i>source: Migration Observatory (columns 1-4), Dustmann and Frattini 2013 Table 4a (column 5)</i>					

8. Dustmann and Frattini’s findings also show an overall ratio of revenues to expenditures for migrants worse than that of the UK-born, but despite the overall negative contribution in every year they suggest that the fiscal cost of migration has been mitigated by a positive contribution by recent migrants from both the EEA and outside the EEA. Their headline conclusions have been very widely repeated and publicised, most commonly that for EEA migrants since 2000:

- They contribute 34% more than they receive
- This amounted to over £20bn from 2001-2011
- They are only half as likely to claim state benefits as the general population

Fig.10

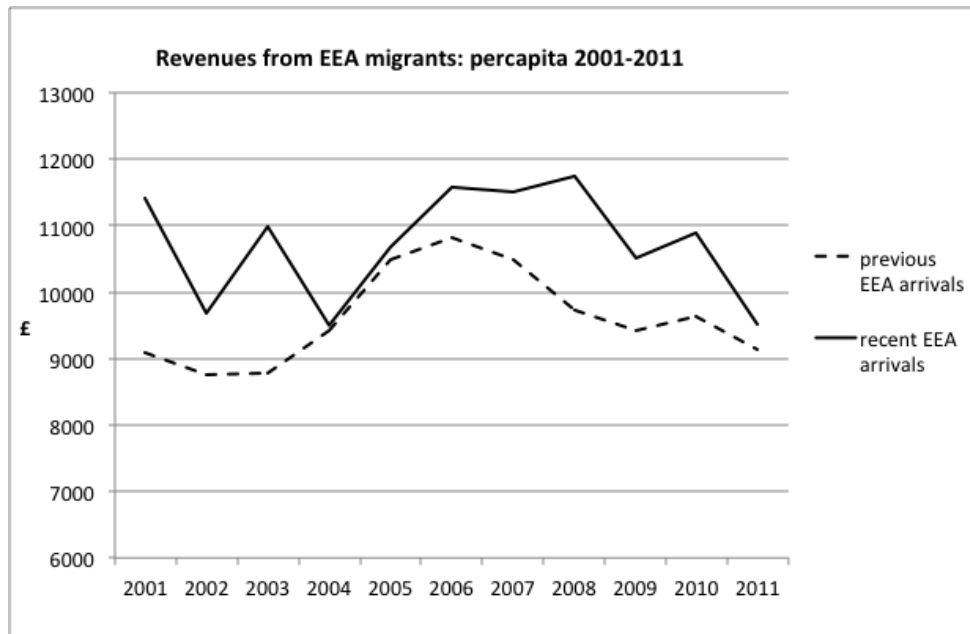


9. However, although Dustmann and Frattini have looked at an even longer period than Srisandarajah et al., they do not appear to have made any change to Gott and Johnson's methodology either. So it is hard to understand the confidence with which they assert the precision of their estimates, when the methodology has been clearly stated by their predecessors as allowing only 'tentative' or 'partial' analysis. *This paper identifies key elements of revenues and expenditures where it is clear that applying a general methodology to the specific groups singled out by Dustmann and Frattini will actually result in particular and quantifiable distortions. Adjusting their estimates to take account of these distortions suggests that their conclusions that recent migrants made a significant positive fiscal contribution are wrong.*

## The revenues conundrum for recent migrants

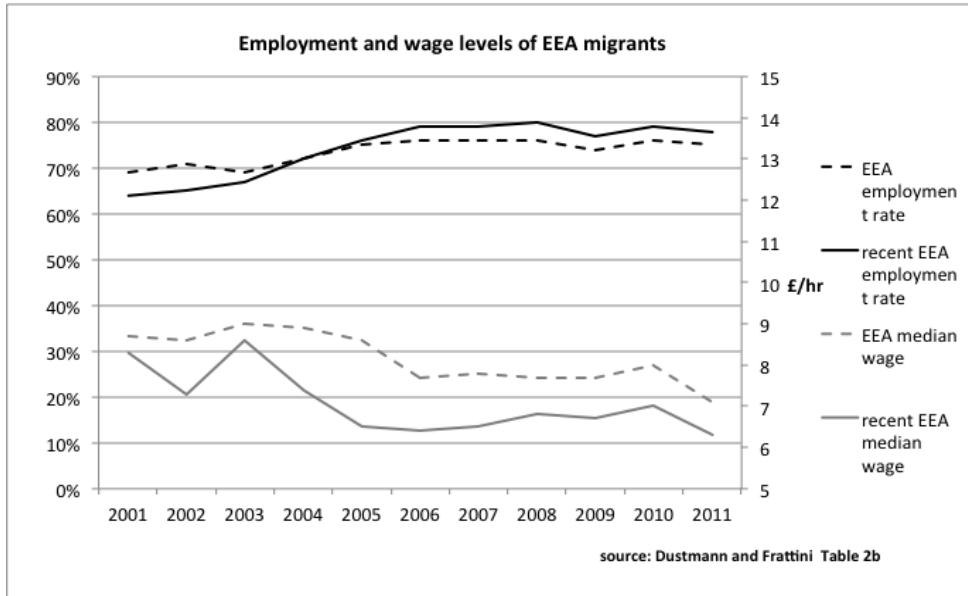
10. Not only do Dustmann and Frattini's positive headlines ignore their findings of consistent overall fiscal cost of migration, but they are very puzzling. On the revenue figures and migrant numbers from their own paper, recent EEA arrivals have paid much more in taxes per capita than previous EEA arrivals.

Fig.11



11. But the paper also found that although there was little difference in employment rates, median wage levels for the recent arrivals were lower in every year than for previous arrivals. If recent arrivals were working about as much as previous arrivals, but were being paid less, how could they be paying much more in taxes?

Fig.12



12. And the same claim was made that recent *non*-EEA migrants were paying more in taxes than previous *non*-EEA migrants even though recent arrivals had lower employment levels *and* lower median wages in every year than previous arrivals.

Fig.13

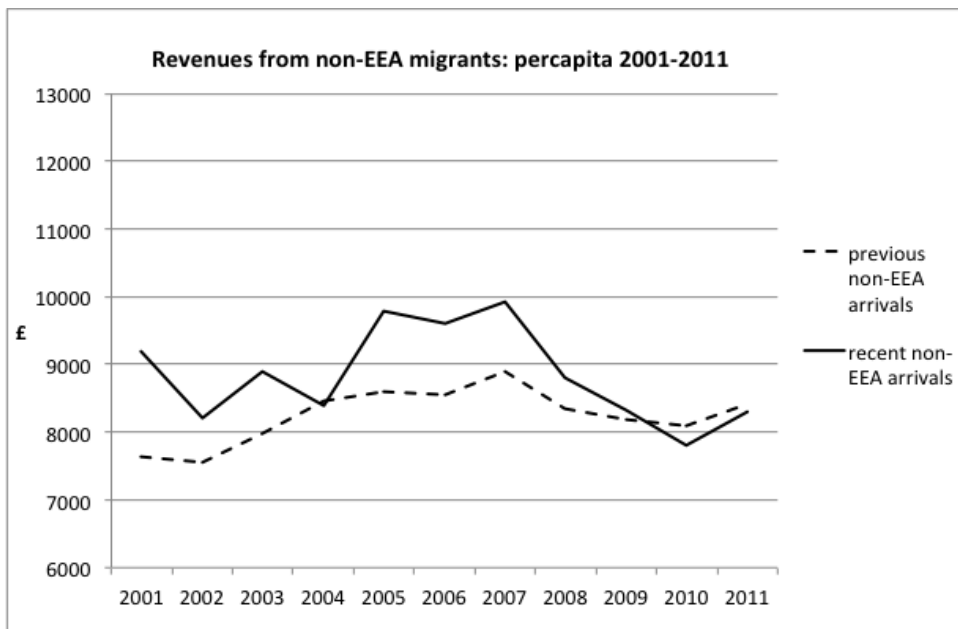
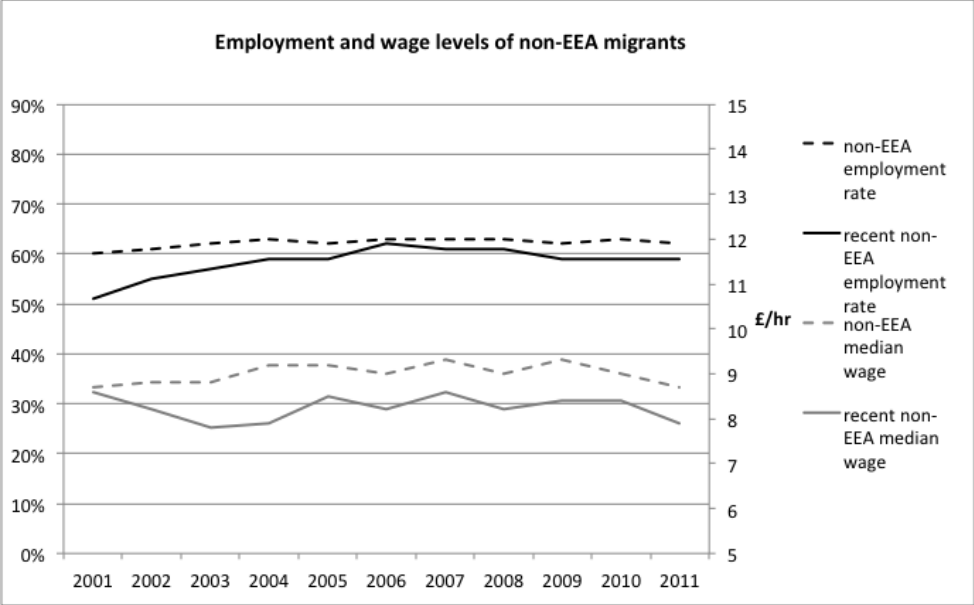


Fig.14





## Allocation of government revenues

13. As the authors say, correct allocation of revenues and expenditures is critical to the accuracy of the results. Their stated approach was that *"when faced with an option about alternative ways of allocating fiscal costs to immigrants we have chosen throughout the paper to calculate a "worst case" scenario, from the immigrants' standpoint, in the sense that the net fiscal impact of migrants is most likely to be more positive than our estimates suggest.* (p.4). In fact, throughout the paper the authors seem to have taken a rather different approach. At each point where a clear decision has been made about the allocation of fiscal cost, the choices are certainly not 'worst case' scenarios.

14. Although they broadly follow Gott and Johnston's methodology, they seem to have taken no account of cautionary observations made by Gott and Johnston, or of their pointers to factors that might need to be taken into account in a fuller analysis. Despite saying *"The contribution of recent immigrants (i.e. those who arrived after 1999) to the UK fiscal system, however, has been ... remarkably strong"*(p 27) at no point in their narrative do they reflect on their findings that recent migrants appeared to be paying more in revenues than those who arrived earlier and have been in the UK longer. Nor do they provide an explanation for the difference.

15. Dustmann and Frattini's approach to most government revenues is top-down. They take the whole amount of discrete revenue streams and then allocate them to people according to a range of different criteria that they feel most appropriate to the revenue stream in question. For personal taxes they take a different approach and calculate them from the bottom up.

16. The validity of the assumptions on some of the major revenue streams that led to their precise estimates of the revenues attributable to recent migrants are considered in sections A-F below, and their potential impact estimated. It is very hard to avoid the conclusion that the tax contribution for both the recent EEA and recent non-EEA migrants has been significantly over-estimated.

## A. Company and capital taxes

17. The methodology used by Dustmann and Frattini for dealing with tax paid by corporations is to attribute it to individuals on the theoretical basis that they ultimately own the shares in these companies either directly or indirectly – for example having built up an investment in them through pensions contributions over years. This is conventional in studies of the fiscal impact of migration as although migration might lead to increased taxable profits for companies by e.g. lowering input labour costs and by providing new customers, the benefit of the profits accrues to the companies' shareholders. Because an increasing proportion of UK company shares are held abroad, following Rowthorn (2004) it is also conventional to discount a proportionate share of company taxation.

18. However, Dustmann and Frattini attribute these tax payments to individuals on a per capita actual basis, so everyone is treated as contributing the same, whether UK national, long-term migrant, or recent migrant. This does not seem sound for the purposes of establishing the contribution of recent migrants, as it treats even the most recent as having the same investment in UK companies as a life-long resident soon as they arrive in the UK. In fact on arrival it must be that few own any shares at all either directly or indirectly in UK companies. Even if they do start to invest, it cannot be right to presume that this investment immediately accrues in the same amount as held by a resident in the UK since birth. This can certainly not be described as a 'worst-case scenario', bearing in mind the average age of only 26 years shown in their Table 2a and lower income levels shown in Tables 2b. There is, therefore, no justification for the allocation of these revenues on this basis.

19. Indeed, in their previous paper on the fiscal impact of EU A8 migration between 2004 and 2009 (Dustmann, Frattini and Halls 2010), they did recognize a worse scenario: *Alternatively, in our third scenario, we relax the implicit assumption that A8 immigrants and natives generate the same amount of corporation tax and capital gains tax per head by apportioning revenues, net of the foreign owned share, entirely to natives (  $18 \alpha A8 = \dots = 21 \alpha A8 = 0$ ;  $18\alpha N = \dots = 21\alpha N = 1$  ).* Noting again in their conclusions " *The worst-case scenario (from the A8 immigrants' point of view) is reported in the bottom right-hand corner of Table 7. Here, we consider scenario 3 for expenditures and for receipts, where revenues from corporation tax and capital gains tax, net of the foreign-owned share, and inheritance tax revenues are entirely allocated to natives.*" There is no explanation in their present paper of how the worst-case scenario now is one in which recent migrants are treated as having exactly the same investment share as UK-born residents.

20. Using this methodology, it appears that recent EEA migrants will have been treated as contributing over £4 billion in corporate taxation during the period, and by 2011 at a rate of over £700 million a year, and Recent non-EEA migrants over £9 billion during the period and by 2011 over £1 billion a year.

Table 2

	Recent migrants EEA proportion adult population	Recent migrants Non-EEA proportion adult population	Corporate tax etc. receipts 2001/2 on £m (deflated)	Overseas share ownership (deducted for pro rata calculation) %	Estimated CReAM attribution to Recent EEA pro rata £m	Estimated CReAM attribution to Recent non-EEA pro rata £m
2001	0.24%	0.72%	47220	0.340	75	226
2002	0.35%	1.26%	40361	0.357	92	326
2003	0.44%	1.73%	34257	0.359	97	380
2004	0.65%	2.23%	39755	0.361	165	567
2005	1.04%	2.65%	50477	0.363	336	852
2006	1.44%	3.15%	53045	0.380	473	1036
2007	2.07%	3.58%	55154	0.400	684	1185
2008	2.22%	4.11%	52535	0.408	691	1277
2009	2.27%	4.35%	35881	0.415	476	913
2010	2.84%	4.65%	43308	0.425	708	1157
2011	2.99%	5.03%	46181	0.434	783	1316
Totals					4579	9234
Population data: Dustmann and Frattini. Overseas share ownership: ONS. Tax data: HMRC						

21. These amount to nearly a quarter of the net fiscal contribution assessed as having been made by the recent EEA group over the period, increasing to over a third of the net fiscal contribution in 2011. For the recent non-EEA group they amount to over three times the net fiscal contribution assessed as having been made by them over the period. Taking these alone from the balance for this group changes the total net fiscal impact of recent non-EEA from the positive £2.9bn claimed by Dustmann and Frattini to a negative £6bn (in real terms).

22. The methodology might be conventional for attributing corporate taxes to individuals within a relatively stable population, but in the context of assessing the fiscal contribution of large numbers of recent arrivals *specifically*, it is common-sense that account should be taken of whether they are in fact likely to have the same stake in share ownership of UK plc as people who have been here all their lives or settled over the long term. The result of not doing so is a significant over-estimation of fiscal contribution by recent migrants.

## B. Business Rates

23. Business rates accounted for some £24 billion of annual government revenues by 2011. They are paid by the occupants of non-domestic property and primarily paid by large businesses. For example, J Sainsbury pays £400 million a year in business rates for its network of offices, shops and distribution premises to accommodate around 150,000 employees. Dustmann and Frattini apportion these sums "*according to the proportion of businesses owned by each group, proxying business ownership by self-employment status reported on the LFS*". This is not at all a safe assumption for the purposes of the paper, as it attributes to individuals the business rates in fact paid by Barclays, Sainsbury's et al for their extensive portfolios of branches, shops and offices.

24. The inappropriateness of such an allocation can be illustrated by a single simple example. Applying this methodology suggests that Dustmann and Frattini for the single fiscal year 2011 attributed over £250 million in business rates to 40,000 self-employed Romanians and Bulgarians *alone*. This amounts to £6,250 per individual per year and should have prompted some reflection as to the extent to which the method chosen was attributing the tax to the owners of the businesses actually paying the tax. As with the treatment of Company and capital taxes, it cannot possibly be a worst case scenario to attribute payment of these amounts of this tax to recent migrants. The actual amount of Business rates paid by this group might in reality not have exceeded more than a tiny proportion of this amount bearing in mind the scale and nature of non-domestic property that migrants recently arriving in the UK are actually likely to occupy.

25. We illustrate in Table 3 our application of the methodology to LFS data. The actual payment of Business rates by recent migrants might not have exceeded tens of millions, or low hundreds.

Table 3

	Share self-employed population Recent EEA	Share self-employed population Recent non-EEA	Business rates receipts £bn (deflated)	Estimated CReAM Attribution Recent EEA £m	Estimated CReAM Attribution Recent non-EEA £m
2001	neg	neg	23.2	neg	neg
2002	0.1%	0.3%	23.5	12	70
2003	0.1%	0.6%	22.8	23	137
2004	0.2%	0.8%	22.6	37	189
2005	0.3%	0.8%	23.5	80	184
2006	0.6%	1.2%	24.3	139	300
2007	1.5%	1.7%	24.1	369	421
2008	2.6%	2.2%	25.1	644	545
2009	2.6%	2.2%	25	652	547
2010	2.7%	2.2%	24.8	660	557
2011	3.8%	2.8%	25.1	955	715
Totals				3571	3666

### C. Council Tax

26. Council tax is a fixed amount per property payable in relation to domestic accommodation usually by the occupant. This accounted for around £30 billion of government revenues in 2011. The amount paid varies by historical house values (not market value as Dustmann and Frattini say) with the occupiers of the highest-banded properties in an area paying three times as much as the lowest. There is little correlation between market values and Council tax amounts, some of the lowest rates being in areas where property prices are highest; Westminster and Wandsworth consistently having the lowest bills in the country.

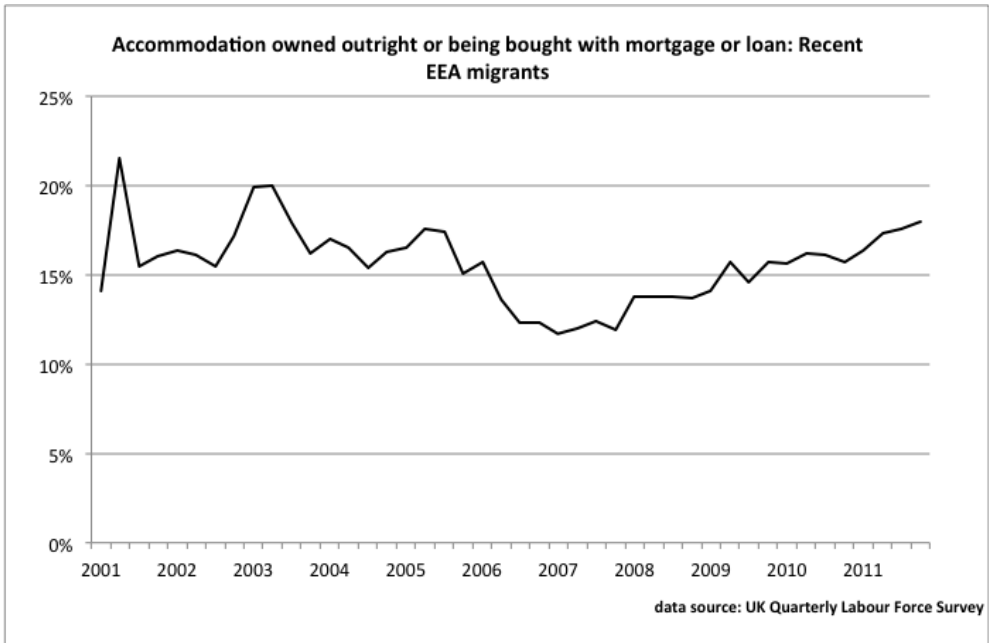
27. The authors say that they take no account of the variation in tax paid on the basis that '*we have no detailed information*'. This contrasts with assumptions made elsewhere in their paper where even less detailed information exists. Certainly bearing in mind the age, family composition, and income levels of the recent migrant groups detailed in their Tables, together with their location within the UK and their likely position on the housing ladder as recent arrivals, it is unlikely that they will occupy the same range of properties as UK-born lifelong residents. Just as with the imputation of share ownership, it cannot be correct that migrants in their first months or even years in the UK are as likely to live in the higher-banded properties in any particular area on the pattern of lifelong residents. Furthermore, where a landlord rents out property to people who each have an individual tenancy to occupy only part of the building, e.g. in bedsits or shared accommodation, the building is a 'House in Multiple Occupation' (HMO) and the landlord is liable for the Council tax, not the occupants. Although a landlord will bear this cost in mind when setting rent levels, and pass on the cost of Council Tax to the tenants in the rent, the tenants will only be paying shares of that cost. Yet if they are in self-contained

accommodation like bedsits these tenants are counted as individual households, and so Dustmann and Frattini will have attributed a whole property's-worth of Council Tax to each one. So not only are they not actually paying Council tax, but to the extent that they pay it indirectly, the amounts are likely to have been overestimated.

28. There is a body of research in this area, summarized by Vargas-Silva (2013) showing the very wide discrepancy between renting and home ownership by UK-born and immigrant households. This includes for example the extensive work carried out by Robinson et al in 2007, with its particularly relevant scrutiny of the position of migrants in a typical large UK city. They found that even though over time new migrants acquired more rights and resources 'The new immigrants interviewed did not necessarily cash in these resources in a bid to step up the 'housing ladder''. As for Council Tax, Robinson found that to a large extent migrants are forced to rely on the private rented sector for accommodation and specifically that this increased demand for houses in multiple occupation and overcrowding.

29. Home ownership rates for recent EEA migrants are particularly low. The graph below illustrates a much lower rate of home-ownership by recent EEA than for migrants generally (Vargas-Silva has 44% for all migrants including those long settled in the UK). Allowing for the dip in the mid-2000s associated with the start of unrestricted migration from the EU8 countries, the levels are quite stable, implying a likely continuing high level of renting, with a consequent lower likelihood of occupying properties in higher council tax bands within any area and higher likelihood of being in HMOs.

Fig.15



30. It is estimated that Dustmann and Frattini have attributed around £3.5 billion to recent EEA migrants and around £7.5 billion to recent non-EEA migrants from 2001 to 2011 based on household proportion. Most literature on HMOs predates the recent significant growth in EEA migration and much is focused on students. However, Robinson notes considerable replacement of student population in traditional areas of shared accommodation by Polish workers even by 2007. Bearing this in mind, together with the age profile and proportion of recent migrants who are single with no dependent children, a more reasonable estimate might be perhaps a quarter of recent migrant households over the period might not be paying Council Tax directly, and to the extent that they pay indirectly, only a proportion of the actual amount for the property. And of those who do pay, their likely clustering near the foot of the housing ladder will mean that they pay less than the simple division of Council tax receipts by number of households used by Dustmann and Frattini. So overall, their fiscal contribution might have been overestimated by at least £1.2bn over the period for recent EEA migrants, and by £2.5bn for recent non-EEA migrants. We adjust by these amounts.

31. It is not clear whether Council Tax Benefit has been taken into account in 'government expenditures', as it is not separately identified. This amounted to around £4bn in 2011. If it has not it would further reduce the net contribution under this revenue heading.

#### **D. Inheritance tax**

32. Inheritance tax (IHT) is payable on the value of a person's assets when they die. It averaged around £3billion a year over the period 2001-2011. The revenue has been allocated by Dustmann and Frattini on the basis of share of house-owning population as a proxy for asset ownership. As shown above, recent EEA migrants have significantly lower rates of home ownership than the UK-born – even by the end of the period at about a quarter of the rate. While this might result in the attribution of perhaps £500 million of IHT revenue to all recent migrants, it also exhibits what must be a better than best-case scenario.

33. Firstly, share of house-owning population is only a partial proxy for asset ownership, and bearing in mind the relative likelihood of recent migrants owning other assets (see section on corporate taxes above) at an even lower rate, it is likely to overstate their asset ownership. It further relies on house-owning members of the group owning properties of similar value to house-owning lifelong residents and long-term migrants, despite having been in the UK for a maximum of ten years, and in most cases very much less. It further relies on them, with a much younger average age, dying soon after their arrival in the same rate as the general resident population. This seems very unlikely also bearing in

mind the relative health of the group asserted by Dustmann and Frattini. Finally and perhaps most significantly, there is a threshold which over the period increased from £250,000 to £325,000, and below which no tax is payable.

34. It seems very unlikely indeed that more than a very small number of recent migrants will have paid any inheritance tax at all. Dustmann and Frattini seem to have paid no regard at all to what differences there might be in reality between recent migrants and the general population that would affect the revenues in question, and their attribution of IHT is about as far from a worst-case scenario as possible. We adjust revenues conservatively by £250m over the period.

### **E. Income taxes and National Insurance Contributions (NICs)**

35. The largest single element of government revenues is Income Taxes and National Insurance Contributions (NICs), amounting to around £250 billion in 2011. Dustmann and Frattini say they derived the revenue contributions for each group by applying the relevant real allowances and rates of tax for each fiscal year to income levels recorded in the LFS. Their only description of their methodology is *"We estimate each group's share of total payments from the LFS data by applying year-specific NIC and income tax rates and allowances to individual wages"*.

36. There are well-known shortcomings in using the Labour Force Survey for identifying income. As an official Technical Note on UK Income Data Sources advises: *"The primary purpose of the Labour Force Survey (LFS) is to collect information on labour market activity. It also collects some data on employee earnings for a subset of its sample. However, ASHE is the preferred source for average earnings data for individuals in employment as it has a larger sample size, while the FRS is the preferred source for average family or household earnings/incomes"*<sup>1</sup>

37. The key point is that the LFS does not purport to be and is not recommended for use as a base for establishing either individual or household earnings. It covers employee earnings only, and only for a subset of its sample. Dustmann and Frattini make no mention of the possible impact this might have on their data or results, nor do they recognise in their overall conclusions that their calculations for the largest component of revenues might not be a reliable basis for their claimed precise estimation. Stone (2014) outlines some issues in his own comments on their paper.

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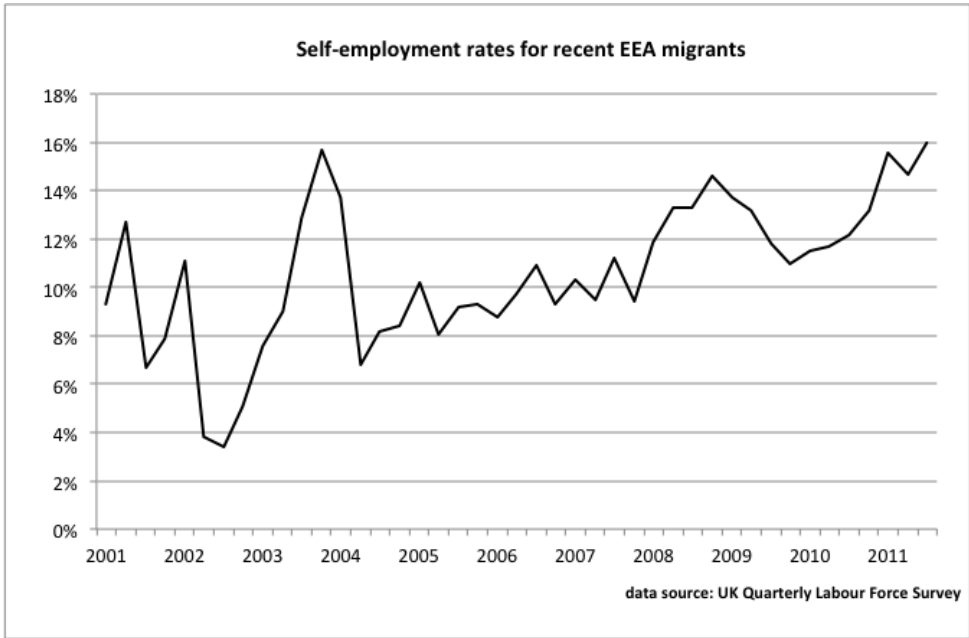
<sup>1</sup> <https://www.gov.uk/government/publications/family-resources-survey-technical-note-on-uk-income-data-sources>



38. While in the absence of better evidence it might not be unreasonable to use what is to hand, the results need to be checked against any other available indicators. Consideration must be given to whether any distortion might have resulted, and some adjustment made, and at the very least a cautionary note is necessary about the reliability of the results, especially when they are presented as 'precise estimates'. It is not possible to attempt a reproduction of Dustmann and Frattini's calculations, because they do not describe their methodology in the treatment of particular circumstances (and have declined requests to do so). They will have made assumptions about such factors as second jobs, part-time working, temporary workers, maternity and sickness absences, posted workers etc. that cannot be guessed. But more important still is their treatment of the self-employed whose income is not recorded in the LFS.

39. As noted by Ormerod (2007) *When an individual self-classifies as self-employed, the respondent is not asked for any information on hours or earnings as these are outside the scope of the survey. Despite the LFS being the main source of information on the self-employed, it cannot be used to examine their 'earnings'.* Dustmann and Frattini make no mention of having taken account of this. The possibility of distortion is clear from the difference in proportions of self-employed between the migrant groups and the UK-born population and the fact that these have changed significantly over the course of the period. This is in contrast to the native population where the change in proportion of self-employed has been gradual and limited.

Fig.16



40. In their previous paper on EU A8 migration, Dustmann and Frattini did in fact note *"The LFS does not have wage information for the self-employed and therefore they are excluded from this calculation. Taxes on incomes of the self-employed make up less than 15 per cent of total income tax*

*revenues in every year (source: table 3.4 of HM Revenue and Customs, Survey of Personal Incomes). As a robustness check, we have calculated in every year the share of total income tax payments due to employees. We have then used this share to calculate the fraction of total income tax payments to be apportioned as described above, and we have allocated the remainder proportionately to the shares of A8 immigrants and UK natives in the self-employed population. Results are virtually unchanged"*

41. The natural meaning of this appears to be that they took near 15% of total income tax payments and allocated it on the basis of shares of the self-employed population. This would mean that self-employed people were all treated as earning the same amount and there was no difference in self-employment income between the UK-born population and the most recent migrant groups.

42. If this is what they have done in their present paper it seems quite unsound. Among lifelong and long-term residents in the population, many if not most of the self-employed will have long-established and sustainable businesses. On the other hand, most recent arrivals of necessity will be starting up for the first time and it would be most unsafe to make any assumption that their income matched that of the those who have established and maintained themselves over years through self-employment. This is particularly the case when looking at some of the recent EEA migrant groups, including for example the 40,000 from Romania and Bulgaria declaring themselves as self-employed in 2011. Indeed, HMRC's report on personal income statistics<sup>2</sup> shows how tax from self-employment income derives from particular sectors, and that for example in 2010/2011 those in the legal and accountancy sector (3% of self-employed) account for nearly as much income as all those in the construction sector (20% of self-employed), and five times as much as all those working in the agricultural sector.

43. The impact of this would again be distortive of the fiscal balance in favour of the migrant groups. Bearing in mind the actual likely nature of self-employment and related earnings and income tax payment among them, it is clearly not a worst case scenario. The effect of it would be to have attributed income tax and NICs averaging £10,000 a year in real terms in each year to each person declaring themselves as self-employed; this implies income well above median wage levels for any group. Recent research looking at the income of self-employed people, funded by the Joseph Rowntree Foundation (Murphy 2013), found that '*large numbers of people have entered marginal self-employment over this period [1999-2010]*' (p15) and that there were some '*million or so people making very small sums from self-employment*' (p25). These sums are so small that in fact they would not be liable to pay any income tax at all.

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<sup>2</sup> HMRC Personal Income Statistics 2010-2011 [www.hmrc.gov.uk/statistics/personal-incomes/tables3-1\\_3-10.pdf](http://www.hmrc.gov.uk/statistics/personal-incomes/tables3-1_3-10.pdf)

44. Much the same distortive effect would occur even if Dustmann and Frattini simply estimated likely total direct tax payments from those employees whose income is reported in the LFS, calculated ratios between the different groups, and allocated total government revenues from income tax and NICs on the basis of these. In that case too, the above-average tax receipts from self-assessed income tax will be allocated without regard to the way these are very unevenly shared among different sectors and the likely different prevalence of UK-born and migrants self-employed within these sectors. Even if they calculated revenues in both ways 'as a robustness check' as they did in their earlier report, and found that there was little difference, this does not mean that there is no distortion, as both calculations can result in the same distortion.

45. The limitations of the income data in the Labour Force Survey, and the possible consequences, are not consistent with Dustmann and Frattini's claim to have been able to provide precise estimates. The underlying data are not suitable for the purpose of such estimation, and no allowance has been made for any distortion likely to have arisen as a result.

46. The potential impact can be estimated by allocating total income tax and NICs to employees and self-employed as if they were payable in proportion to PAYE and SA income tax payments, and then attributing these to the recent migrant groups on the basis of their share of the self-employed population. That appears to have been the methodology of Dustmann and Frattini's previous 'robustness check' and suggests that the fiscal contribution of recent EEA migrants may have been over-estimated by some £5 billion, and of recent non-EEA migrants by the same amount, taking Murphy's findings of extremely low income levels associated with the growth of self-employment over the period as a reality check.

## **F. VAT and other indirect taxes**

47. VAT and other indirect taxes were calculated on the basis of LFS income data too. *"We estimate each group's share of payments for each of these consumption taxes by applying the effective tax specific rates by decile of household disposable income to the gross individual income from the LFS"* [p.12]. The ONS publication "The Effect of Taxes and Benefits on Household Income" provides these rates as percentages of gross income and of disposable income. So there are a number of variables here to be combined to give an estimation. Dustmann and Frattini do not say whether they used the gross rates or the net rates, and one is inferable from their use of deciles of household *disposable* income, the other from their use of individual *gross* income. There is an inherent general uncertainty as a result whose impact cannot be ascertained without more information about the methodology used.

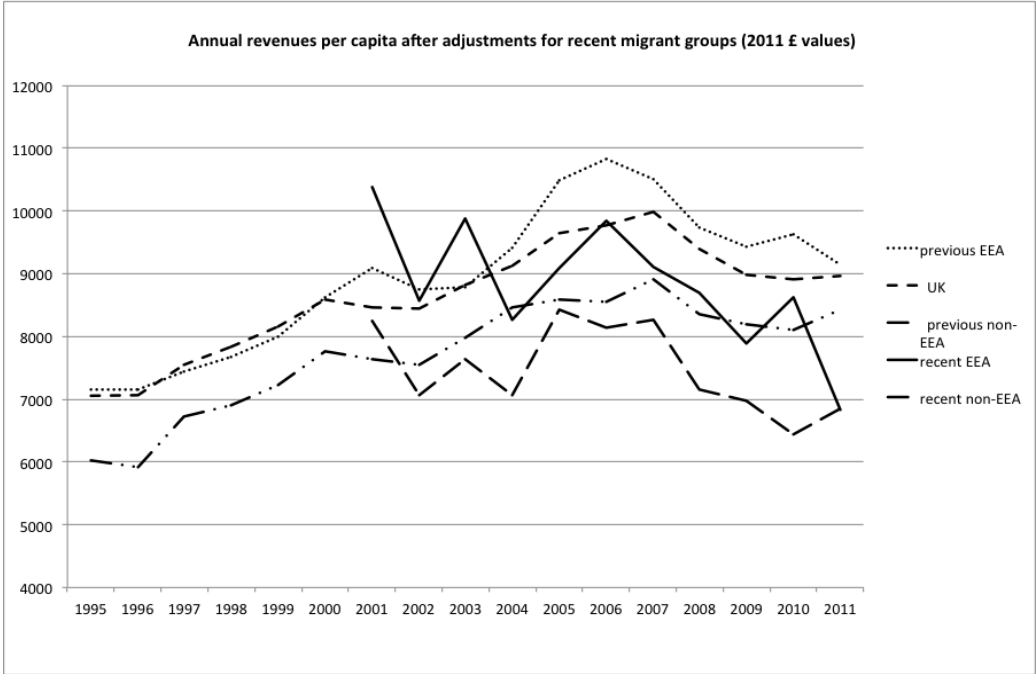
48. But taking the findings at face value, there will be a particular potential distortion arising from the absence of the self-employed in LFS income data. The section on income tax suggests that the income of the UK-born and long-term residents in self-employment is higher than average income and much higher than that of recent EEA migrants in self-employment. To allocate VAT and indirect taxes essentially on the basis of average employee income means that these revenues will be underestimated for the UK-born, and over-estimated particularly for the recent EEA migrants. We have adjusted these revenues in line with our calculations of over-estimation of income for personal taxes.

49. Further, as stated in the CReAM paper, Dustmann's previous research suggests that levels of consumption for migrants may be 20% lower than for the indigenous population. While they do calculate an alternative scenario on this basis, their conclusions and headline reporting are of the central scenario with no different consumption allowed for. Because this previous research posits a likely rather than merely possible lower consumption, we have very conservatively adjusted the central scenario on the basis of 5% lower consumption, having first deducted income we assume to have been over-estimated to ensure we do not double-count. Together these adjustments make an overall difference to the recent migrant groups of around £8.5 billion.

# General trend in revenues

50. Taking into account the likely overstatement for these revenue streams reduces the per capita revenues from recent migrants year on year and reduces them to below the levels from earlier migrants from the same areas. The development of these revenues over time is illustrated in the graph below, and their overall impact summarized in the conclusions at paragraph 91 onwards. The revenues from these earlier migrants are themselves likely to be overstated for these same reasons as for recent migrants, though to a lesser extent. For example they will not have had as much Business rates attributed to them as their self-employment levels are lower, and for Council Tax their home ownership rates are half those of the UK-born rather than a quarter. But the underlying methodology will mean some further overstatement. For the purposes of this assessment they have not been adjusted.

Fig.17



51. So the recent migrants will not have made the very much higher payments of revenues than their predecessors that Dustmann and Frattini claim. Lower payment of revenues is entirely consistent with lower incomes, and lesser ownership of assets and ownership/occupation of property. It is hard to imagine any basis on which recent migrants should have contributed more in revenues than the UK-born population either – bearing in mind the major sources of revenue – and little reason of any kind is given by Dustmann and Frattini in explanation of their findings as to what such a basis might be. Although they mention higher employment levels, they report lower employment levels for the recent EEA group than for the UK-born in the earlier years when they say their per capita revenue

contribution were highest, and actually report lower per capita revenue contributions as recent EEA employment levels increase. Lower contribution of revenues than the underlying population is consistent too with the overall findings of the OECD research (2013).

**52. The foregoing provides a possible solution to at least part of the conundrum as to how higher revenues could have been derived for groups who were found to have been earning less than the UK-born. Taxes on property that they do not own or on profits from which they derive no benefit, have been wrongly allocated to them. And, if self-employed, assumptions have been made that are clearly unrealistic.** It would be illuminating to see the actual amounts Dustmann and Frattini allocated from each revenue stream to each group, and the income numbers used. However, they have declined to reveal this part of their working.

## Allocation of government expenditures

53. In contrast to their efforts to find methods of allocating revenues to specific groups, on the expenditures side Dustmann and Frattini treat all recipients of each benefit as receiving the same amount. The relevant passage is on page 15 of their paper: "*V) Expenditure for "social protection", which includes expenditure for sickness and disability, old age, family and children, unemployment, housing and social exclusion, makes up more than 34% of government expenditures. Since about 85% of these expenditures are allocated in terms of cash benefits, we use LFS information on the receipt of different types of benefits and compute for each group the share among the total recipients of each type of benefit. **Because we have no information on the amount of benefits received, we implicitly assume that every recipient receives the same amount***" [emphasis added].

54. These expenditures are correctly identified as largely cash payments to individuals and households. Each benefit has its own criteria for determining eligibility and for determining entitlement to a particular cash amount. However, although the LFS has no direct information on the amount of each benefit, nor does it have direct information on the amount of any tax paid. Following their own logic, therefore, the authors might just as well have said that they had no information on the amount of income taxes paid, and assumed that everyone paid the same amount.

55. Although obviously the rules for particular benefits can be complex (as they can be for tax too), assumptions can be made that are rather more likely and no more complicated in principle than the ones used for attribution of revenues by Dustmann and Frattini. For example:

- the amount of child benefit is paid on the basis of numbers of children with a premium for the first child
- the state pension is paid in different amounts to individuals depending on whether they are single or in a couple
- the amount of a tax credits award is affected by numbers of children and income level
- housing benefit is affected by household size and income level

56. For example, Dustmann and Frattini used both numbers of dependent children and income levels for calculations of revenues, but they do not explain why they did not apply these data they possessed to estimate amounts of expenditures through cash benefits. This casts further doubt on why they describe their estimation of overall expenditures as 'precise' when there is no precision at all in the estimation of such large components of expenditure.

57. Gott and Johnston specifically noted as an example of the “*unsophisticated and tentative*” nature of their own analysis “*a simple caseload apportionment of social security spending does not take into account variations in the average amounts paid to different groups of people*”. But Dustmann and Frattini claim to have made precise estimation on the very same basis. A consideration of the factors affecting key relevant benefits is contained in sections A-D below and their potential impact estimated.

#### **A. Benefits prevalence**

58. Dustmann and Frattini report “*our evidence on the degree to which immigrants receive tax credits and benefits compared to natives. Recent immigrants are 45% (18 percentage points) less likely to receive state benefits or tax credits. These differences are partly explainable by immigrants’ more favourable age-gender composition. However, even when compared to natives with the same age, gender composition, and education, recent immigrants are still 21% less likely than natives to receive benefits. Yet again, there are differences between EEA and non-EEA immigrants: recent EEA immigrants are more than 50% less likely than natives to receive state benefits or tax credits compared to a 43% lower likelihood for recent non-EEA immigrants.*”

Obviously these are figures for the whole population, which is why taking age into account more than halves the difference, as few of the recent migrants will be receiving the state pension. But if indeed the recent migrant population is even 21% less likely to make any claim on state support, does this necessarily imply any lesser expenditure on them?

59. It is certainly the case that the Labour Force Survey does not allow for a direct and accurate identification of the amount of welfare payments made to individuals. But the likely impact of receipt of state support is obscured by Dustmann and Frattini conflating different expenditures under this heading in their narrative, consistently saying that recent migrants are less likely to be receiving ‘state benefits or tax credits’. Their paper couples benefits and tax credits some 18 times and at no point in the narrative are they separated. This ambiguous phrasing might be taken to imply that they are less likely to be receiving benefits and less likely to be receiving tax credits, or indeed generally getting less in state support. However that is certainly not demonstrated. For example, research by Drinkwater and Robinson (2013) that Dustmann and Frattini themselves reference in their paper shows that different migrant groups have very different patterns of claiming from UK nationals.

60. Using data for the years 2004-2009, Drinkwater and Robinson reported that the probability of claiming different types of benefits varied considerably for different migrant groups relative to each other, and for example that while EEA8 migrants (Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Slovenia and Slovakia) were significantly less likely to claim unemployment-related, Income



Support and sickness benefits, they were significantly more likely to claim tax credits and housing benefit. On the other hand, EU14 migrants and those from Asia were much more likely to claim Income Support. All migrant groups were more likely to claim housing-related benefits apart from those from the Americas and Australasia.

Table 4

<b>Marginal Effects for Immigrant Groups from Probit Estimates of Social Benefit and Tax Credit Claims</b>									
	Unemp. Related benefit	IS (not unemp.)	Sickness or disability benefit	Child benefit	Housing / Council tax benefit	Tax credits	Other benefit	Soc. Ass'st benefits	Any benefits
EU14	0.001	0.006***	-0.008***	0.006***	0.008***	-0.007	0.000	0.008**	-0.010
EUA8	-0.007***	-0.016***	-0.037***	0.008***	0.014**	0.027***	0.000	-0.009*	0.051***
Other Europe	0.007**	0.056***	0.008	0.010***	0.076***	-0.014**	0.007***	0.098***	0.020*
Asia	0.001	0.012***	-0.000	0.012***	0.015***	-0.008**	0.002**	0.022***	0.019***
Australasia	-0.007***	-0.019***	-0.023***	0.017***	-0.026***	-0.028***	-	-0.042***	0.120***
Americas	-0.001	-0.008***	-0.015***	0.016***	-0.007**	-0.015***	-0.001	-0.009**	0.060***
Africa	0.002	0.016***	-0.009***	0.009***	0.026***	-0.008*	0.002	0.028***	0.026***

Source: Table 2 - Drinkwater and Robinson 2013

61. Amounts payable for tax credits and housing benefit are typically rather higher than unemployment-related, Income Support and sickness benefits. As noted above, Dustmann and Frattini say that they have attributed expenditure on benefits on the basis of share of actual recipients, which superficially would allow for this, but they have further assumed that each claimant receives the same amount. However, some of the key benefit payments in question are means-tested, and the findings in their paper on income and employment particularly for the recent groups show that likely income is significantly below that of the UK-born. They also show that they are no more likely (EEA) or actually less likely (non-EEA) to be working. Furthermore, LFS data for the more recent part of the period after 2009 shows that the recent EEA migrants in particular are much more likely to be receiving tax credits than the UK-born population.

62. As Income tax and NICs have been allocated on the basis of 'actual LFS income', notwithstanding the observations of its reliability above, it seems odd that income levels were not taken into account for means-tested welfare expenditures, as assuming incomes do not differ between migrants and UK-born for these purposes is certainly nothing like a worst-case scenario, especially as Robinson and Drinkwater found a greater likelihood of claiming benefits that are means-tested, which are clear pointers to lower income.

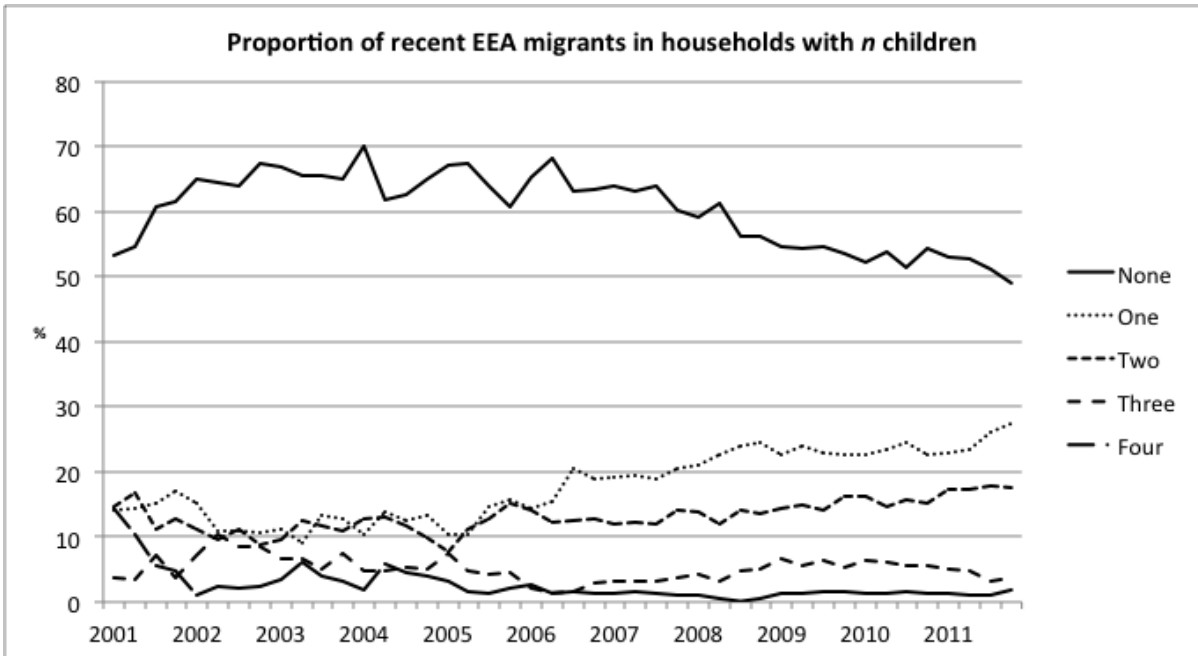
## B. Tax Credits

63. Tax credits are the single largest element of cash benefits after the state pension, amounting to around £30bn in 2011. Awards are primarily a function of the number of children and of income. Thus, to assume that each recipient receives the same amount is clearly unsound unless there is at least some evidence of little variation in these key characteristics between migrant and UK-born claimants. However the evidence points the other way.

64. Dustmann and Frattini's Table 2a shows the number of dependent children per working-age adult in this group increasing by 60% over the period, and moving from half the number per UK-born adult to near parity. Their table also shows that the number of dependent children per recent non-EEA working-age adult almost doubled over the period, increasing to nearly 50% more than the number per UK-born adult, while the numbers of dependent children per UK-born working age adult has in fact shrunk by 13%.

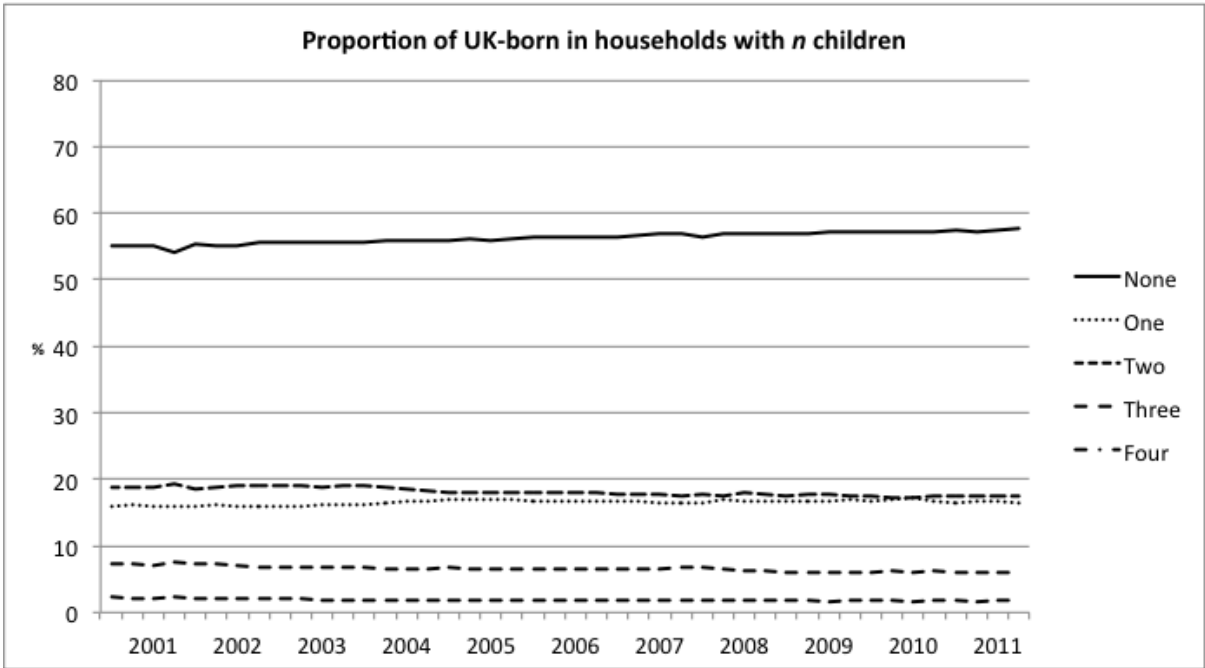
65. More detail is given by the LFS data illustrated in the charts below that shows that in the early part of the period between 60% and 70% of recent EEA migrants were in households with no dependent children. But that has changed dramatically since 2004, showing an increasing proportion of households with dependent children, and increasing numbers of dependent children within households.

Fig.18



66. There has been no similar increase among the UK-born population in the proportion in households with dependent children over the period.

Fig.19



67. While Dustmann and Frattini themselves report lower median income levels for recent migrants, it is possible that these do not reflect differences in income among families generally, or tax credits recipients specifically. But there is clear evidence of significant difference. Although the total number of families receiving tax credits has not changed greatly, the pattern of claims has changed over the period, the numbers claiming higher family-related amounts and Working Tax Credit only both increasing significantly. On the other hand the numbers of those receiving the lower/de minimis Child Tax Credit (CTC) family element only has diminished – firstly with the withdrawal of the ‘baby element’ in 2011, then reducing essentially to nothing with the abolition of the second income threshold in 2012.

68. As the HMRC figures in table 5 below show, awards of Child Tax Credit family element only or less comprised between a quarter and a third of the total number of claims in each year. These were for a maximum of £545 (and a further £545 for a child in its first year for people who had a baby), and made to people with higher incomes. This means that dividing the total cost of tax credits payments by the total number of claimants will allocate much less to everyone in every other claimant group than they were actually receiving, in cash terms around £1,000.

Table 5

Families receiving tax credits (thousands).	Out of work	In-work WTC and CTC	In-work CTC only > family element	In-work CTC family element only or less	WTC only (no children)	In-work total	Total
Jul-03	1,400	1,465	647	1,851	121	4,084	5,500
Oct-03	1,400	1,481	663	1,934	200	4,278	5,700
Jan-04	1,400	1,548	687	1,973	215	4,423	5,900
Apr-04	1,400	1,589	704	2,013	235	4,541	6,000
Dec-04	1,400	1,492	694	2,075	258	4,519	5,900
Apr-05	1,400	1,531	711	2,115	282	4,639	6,000
Dec-05	1,300	1,497	697	2,024	320	4,538	5,900
Apr-06	1,400	1,565	684	2,033	319	4,601	6,000
Dec-06	1,400	1,596	657	1,951	323	4,526	5,900
Apr-07	1,398	1,645	665	1,966	343	4,619	6,017
Dec-07	1,345	1,650	658	1,882	352	4,541	5,886
Apr-08	1,383	1,715	671	1,898	376	4,660	6,043
Dec-08	1,389	1,763	679	1,763	426	4,630	6,019
Apr-09	1,418	1,804	688	1,766	455	4,714	6,131
Dec-09	1,463	1,870	703	1,627	511	4,712	6,174
Apr-10	1,492	1,910	718	1,635	548	4,811	6,304
Dec-10	1,441	1,975	723	1,579	561	4,838	6,279
Apr-11	1,470	2,002	737	1,581	591	4,911	6,381
Dec-11	1,435	1,922	774	1,000	566	4,262	5,697
Apr-12	1,474	1,934	793	984	582	4,294	5,768
Dec-12	1,463	1,837	845		541	3,223	4,686

Source: HMRC Child and Working Tax Credit Statistics - December 2012 Table 1.1

69. That is highly significant because the data from the Labour Force Survey suggests that the UK-born dominated the upper income distribution of the tax credits recipient population during the period. As noted by the Child Poverty Action group at the time "*families on incomes of up to £58,000 (sometimes more) received at least some of the family element of £545 a year. .... Approximately a million claims may be withdrawn for families who were entitled to the family element only in 2011/12*". The LFS data indeed suggests a reduction of this magnitude, but whereas the number of UK-born recipients of tax credits reported shrank by nearly 30% from Q1 2011 to Q1 2013, the numbers of EU-born recipients hardly changed. This points to near 30% of UK-born claimants likely to have been receiving no more than the minimum payment of tax credits and clear evidence of considerably higher income levels among UK-born recipients than migrant recipients.

70. This has two consequences. Firstly, over a quarter of the total amount of tax credits will have been attributed by Dustmann and Frattini to UK-born recipients who will in fact have received only a small proportion of that amount. Secondly, the actual amount of tax credits to be allocated to all of the

other recipients getting more than just the family element will have been understated, and will make a disproportionate difference to the recent EEA migrants who are more likely to be claiming than anyone else. But even a higher average taking correct account of the family element only awards still presumes that everyone apart from them gets the same amount.

71. In fact they cannot be presumed to get the same amount because lower migrant incomes persist across different household composition and to the extent that by the end of the period there are stark differences in the income levels of families with dependent children. Taking recent migrants from the EU A8 and adding Romania and Bulgaria (making by 2011 the considerable majority of the recent EEA migrant group) the data point clearly to their families having significantly lower incomes across all three of the most common family groupings (those with 1-3 children) with over 80% falling within the lower three income deciles, compared with only 50-60% of those from the UK.

Fig.20

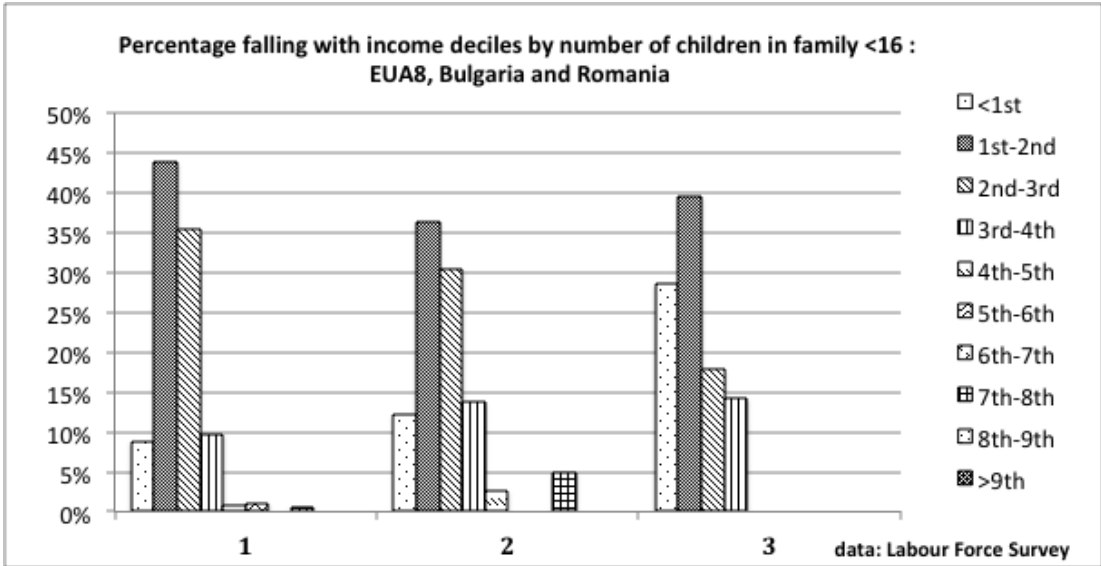
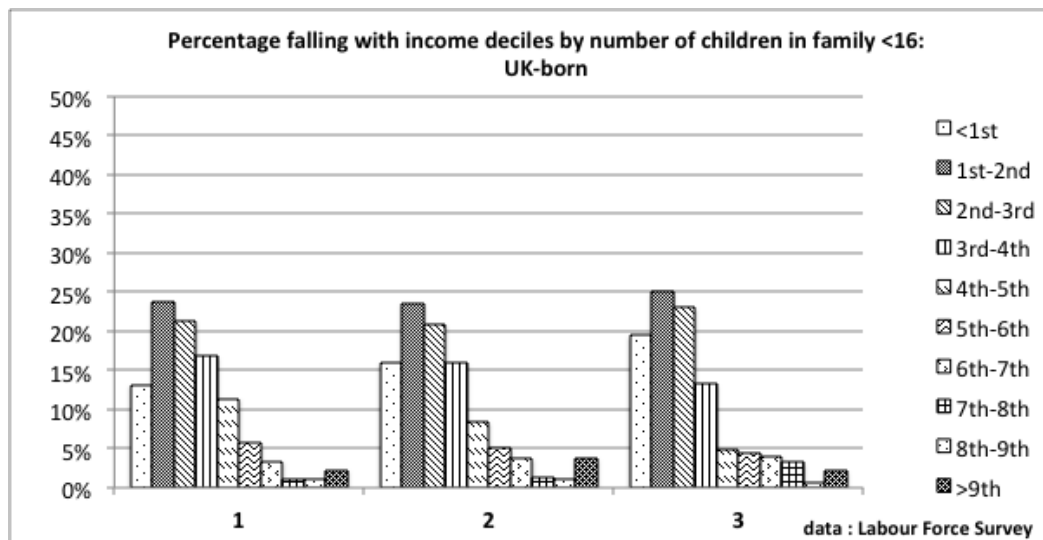


Fig.21



72. This suggests that a significant distortion is likely from the decision by Dustmann and Frattini to have allocated welfare expenditures in the form of tax credits each year on the assumption that recipients all received the same amount. They will not have received the same amount because family composition and income levels vary across the different groups. In particular, the lower income levels of recent EEA migrants will mean that expenditures on these benefits for them will be higher than for the UK-born, especially when nearly 30% of UK-born recipients seem likely to have been receiving only the minimum amount. The same will apply of course to other similarly means-tested benefits that depend on income level.

73. It is estimated that Dustmann and Frattini might have allocated about £7bn (at 2011 values) of tax credits to recent migrants. If so, the systematic distortion arising from the uneven distribution of 'family element only' recipients between UK-born and migrants would probably mean an underestimation of around £2bn. Further allowance needs to be made for the differences in income levels illustrated above and numbers of children. While any estimation based on LFS income levels and distribution will give an uncertain result for reasons outlined above, it will give an indication of the extent to which Dustmann and Frattini's results have been affected by not taking account of these issues, and conservative assumptions suggest a further underestimation of around £3bn.

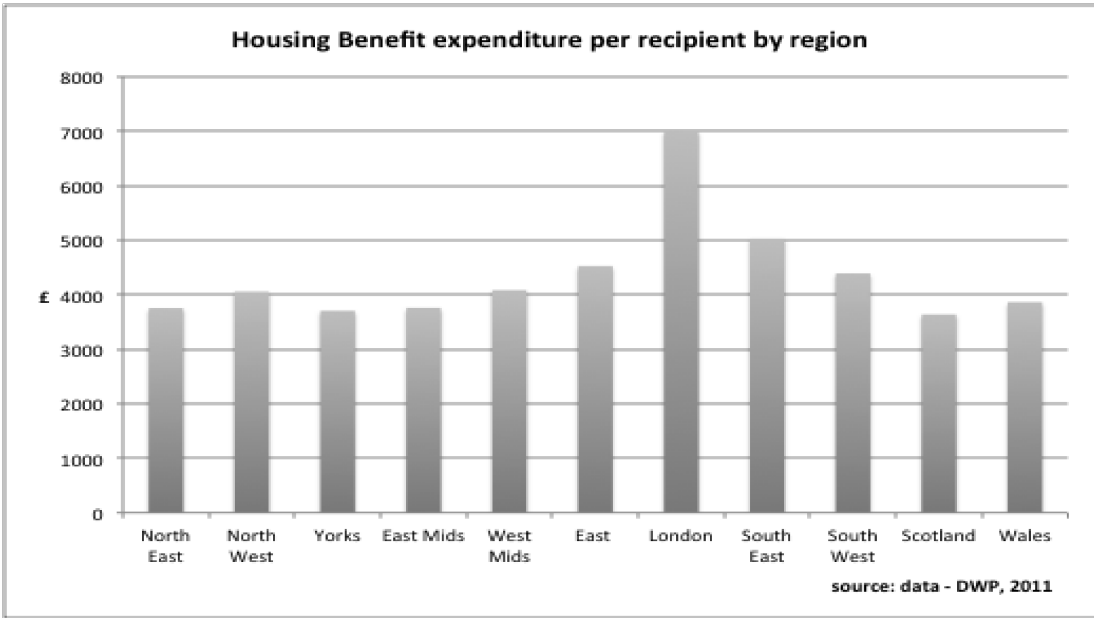
**C. Housing benefit**

74. Previous research for the period 2004-2009 by Drinkwater and Robinson found that all migrant groups except those from the Americas and Australasia were more likely to be claiming housing benefits than the UK-born population. This is confirmed by more recent LFS data, and presumably Dustmann and Frattini have taken this greater prevalence into account in their shares of recipients. However, they have not taken account of whether the amounts claimed are likely to vary by different migrant groups.

75. In relation to the cost of providing social housing, they embark on a set of corrections and conditioning to prove the relative proportion of migrants living in social housing allowing for geography, age etc. The amount of expenditure on housing benefit is three times the expenditure on social housing, but nothing like the equivalent level of scrutiny has been applied, the total just being divided amongst the recipients regardless of who or where they are. This seems fundamentally unsound since research shows clear differences between the characteristics of the relevant migrant groups and the UK-born population. Migrants – particularly recent migrants – might be much less likely to live in social housing, but they are more likely to claim housing benefit. This is consistent too with Robinson finding they were much more likely to be in the private rented sector.

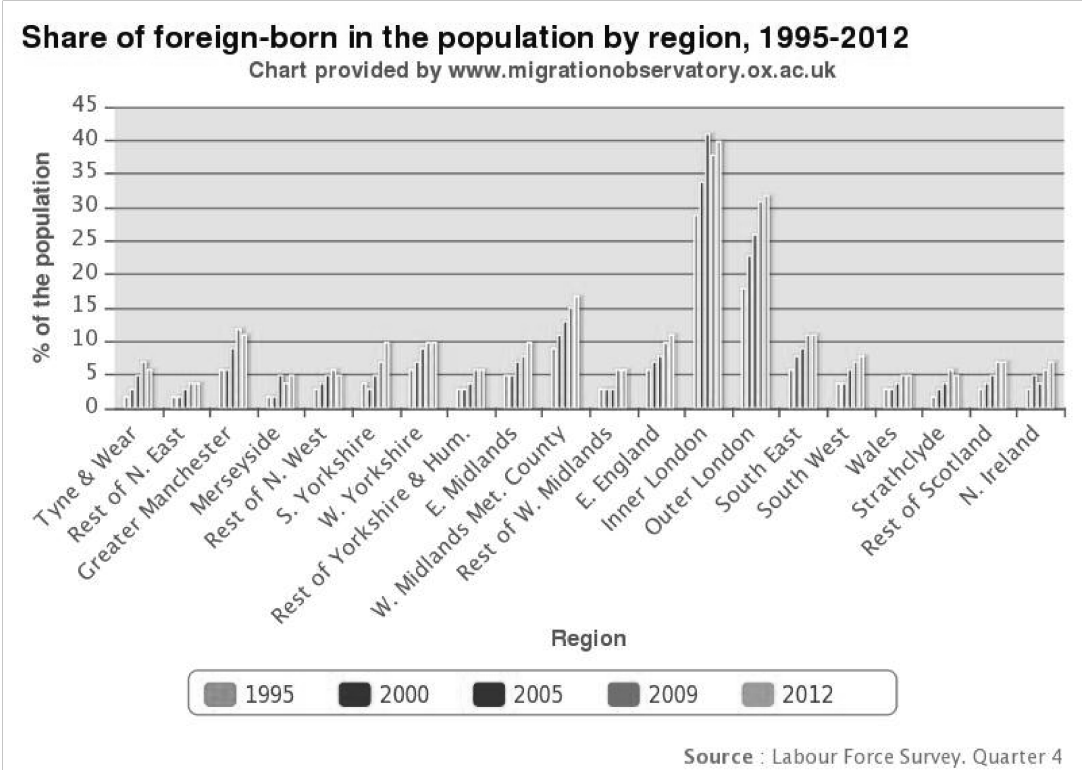
76. Further, and more significant in terms of the estimation of housing benefit expenditures, is the clustering of migrants in particular geographical areas. Expenditures by recipient vary significantly across regions. By the end of the period the average in London was 70% higher in London than in the rest of the country.

Fig.22



77. Furthermore, as recently illustrated by the Migration Observatory<sup>3</sup>, throughout the period migrants have been concentrated in those areas where average expenditures per recipient were highest.

Fig.23



78. By 2011, around 1.5m million migrants living in London had arrived since 2000 (Greater London Authority 2013), a third of all recent migrants. The assumption that there will be no difference at all between the amounts received by recent migrants and those received by the UK-born is clearly likely to underestimate housing benefit expenditures on migrants. And it is another example of something that is not a worst-case scenario. This issue was highlighted by Gott and Johnston even in 2002 who noted "Migrants tend to live disproportionately in the South East, so their share of housing benefit may be higher per head than that of the UK-born population" [p29].

79. By 2011, recent migrants formed about 7% of the housing benefit recipient population nationally, but twice that proportion of the housing recipient population in London. Put another way, 40% of recent migrants receiving housing benefit were in London. On this basis alone, housing benefit expenditures on recent migrants are likely to have been under-estimated by 15-20%, or around £2 billion from 2001 to 2011.

<sup>3</sup> <http://www.migrationobservatory.ox.ac.uk/briefings/migrants-uk-overview>



#### D. Child Benefit

80. Child benefit is paid at a rate per child. Dividing the total by the number of recipients takes no account of the number of children that each recipient has. This would overstate the amount paid to families with fewer than average children and overstate the amount for those with more. However, this is countered by the fact that a premium of nearly 50% is paid for the first child. For recent EEA migrants, the table above at Fig.18 shows that the 2001-2011 period is split into two distinct parts. It should be noted that the variability in the earlier years is likely to derive from small sample sizes.

81. Before 2006, expenditures are likely to have been understated relative to the UK-born because of their higher average number of children among recipients, but the number of recipients is low. For the single year 2006 they are likely to have been overstated, but probably by no more than £10m. After 2006, the average number of children in families with children dropped, but because of an increasing number of previously childless people having a first child. In terms of total expenditures, the higher proportion of one-child families roughly balances the lower proportion of families with three children or more. This means – although only coincidentally – that calculation on the basis of numbers of children is unlikely to be much different from a simple share by recipients.

82. However, it is not possible to make an accurate top-down estimation of the overall effect because of some apparent disparities between the numbers of EEA migrant recipients of child benefit and the numbers of children in the household. Some discrepancy is to be expected as some migrants are eligible to claim for children abroad. An indication of the possible scale is given by the information from not long after the end of the period examined that *"as at 30 September 2012, there were 23,855 ongoing child benefit awards under EC Regulation 883/2004 in respect of 40,251 children living in another member state"*<sup>4</sup>. Checking against LFS data from this period shows some child benefit recipients in households with no dependent children, particularly from Poland, and also from Ireland, but not at anything like this level. These are the two countries with the largest number of claims in the Written Answer. The other countries unsurprisingly do not appear in the LFS data as the survey sample is too small to detect the numbers involved reliably. The overall number is around 5% of EEA child benefit recipients. In view of these uncertainties we have not made any adjustment, but point out that the calculation used will not provide a sound basis for a precise estimation.

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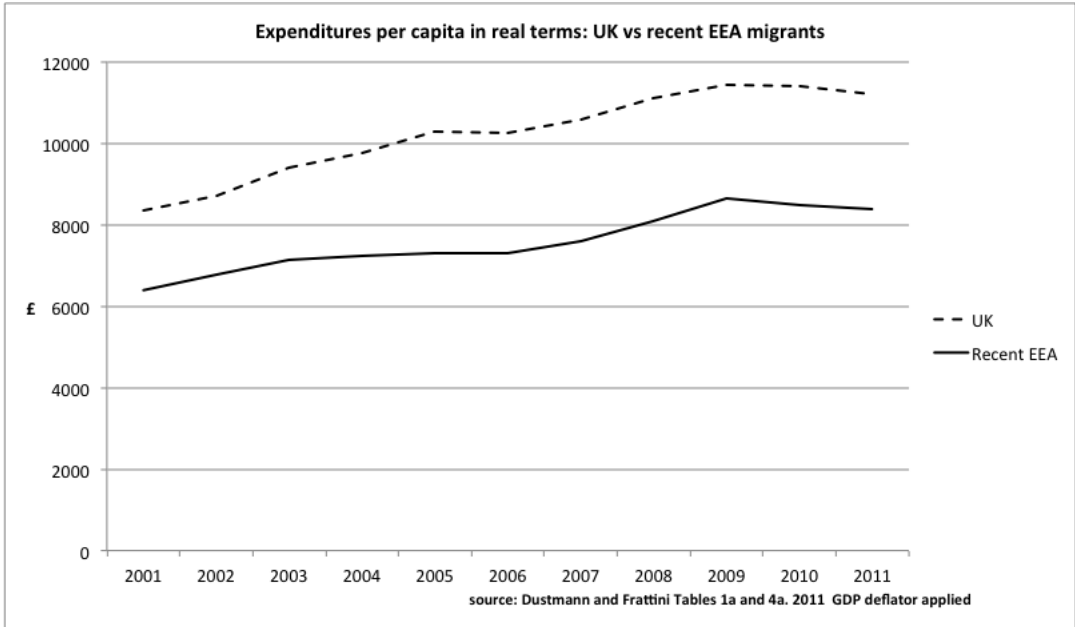
<sup>4</sup> Hansard: Written Answers to Questions Monday 22 October 2012, Column 619W

# General trend in expenditures

83. Dustmann and Frattini’s findings were that the recent EEA migrant group was responsible for 93% of the positive contribution of recent migrants, as a result of both higher revenues and lower expenditures. Cash benefit expenditures on this group fall largely under the three headings discussed above.

84. The growth in per capita expenditures for this group from Dustmann and Frattini’s data has not kept up with growth of per capita expenditures for the UK-born population. Bearing in mind the dynamic changes within the recent EEA group during the period, in particular their changing family composition and likely consequences for prevalence and amount of cash benefits receipt, and share of spend on education and housing, it is surprising to note that Dustmann and Frattini find the gap in per capita expenditure in real terms has actually increased over the period.

Fig.24



85. In the early part of the period 2001 to 2011, the recent EEA migrant group sample was 70% ‘Western European’ and 60-70% in households with no children. Expenditure on this group in 2001 was estimated by Dustmann and Frattini at just under £2,000 less per capita than for the UK-born population. By the end of the period only 40% were in households with no children, and around 70% of the group ‘Eastern European’. And median wage levels in this group had fallen further behind the UK-born. Yet expenditure in 2011 was estimated at nearly £3,000 per capita less than for the UK-born population, the gap in real terms increasing by almost 50%.

86. When the demographic changes are such as to be likely to reduce any difference in expenditures, it seems counter-intuitive that the difference has increased – in real terms – by nearly half. However, much of the difference is accounted for by pensions, around 60% by the end of the period. Looking at the difference per capita apart from pensions, it seems that even on Dustmann and Frattini's analysis (i.e. taking no account of the over-estimation of revenues detailed above), it is shrinking rapidly, and in line with demographic change as indicated by the adult proportion of the recent migrant population.

87. Bearing in mind that while this difference takes into account to some extent the increasing incidence of receipt of benefits resulting from the demographic change it does not, as described above, take proper account of the value of these benefits. The drivers for the increasing expenditure can be illustrated by comparing the data from the LFS on numbers of recipients of state support among the overall EEA migrant population as illustrated in the two charts below. They show that reporting the prevalence of conflated 'benefits and tax credits' says nothing about their fiscal effect (and this applies generally, not just to analysis involving migration). As the charts below illustrate, these two groups are about as likely to claim 'benefits and tax credits' as each other, but it should be clear that the total cost of spending on each group is likely to be quite different, simply because of the differing proportion within the groups of the range of benefits. And on top of that, the income levels of the two groups are quite different, making 'as likely to claim' even less relevant when a significant proportion of the benefits in question are income-related. Likelihood of receipt obviously matters to any discussion or assessment of fiscal effect, but only in relation to discrete heads of welfare expenditure, and comparing like with like. The second chart – covering primarily recent migrants, and the largest part of the recent EEA migrant group – also shows a very clear trend.

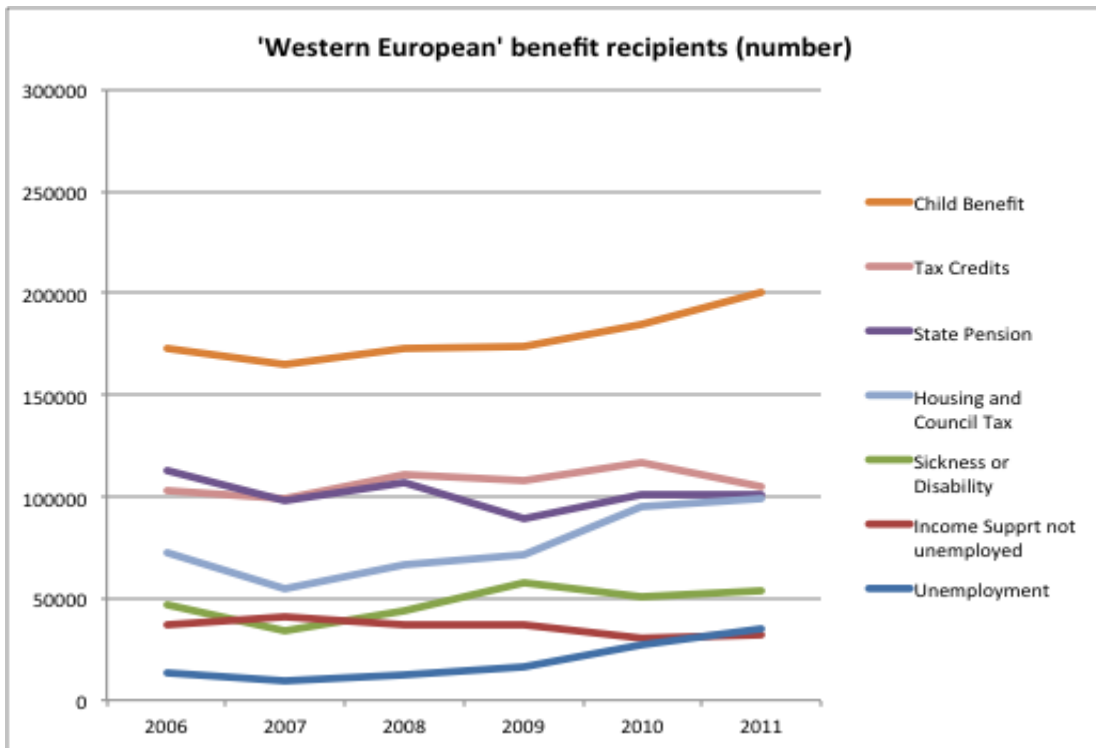


Fig.25

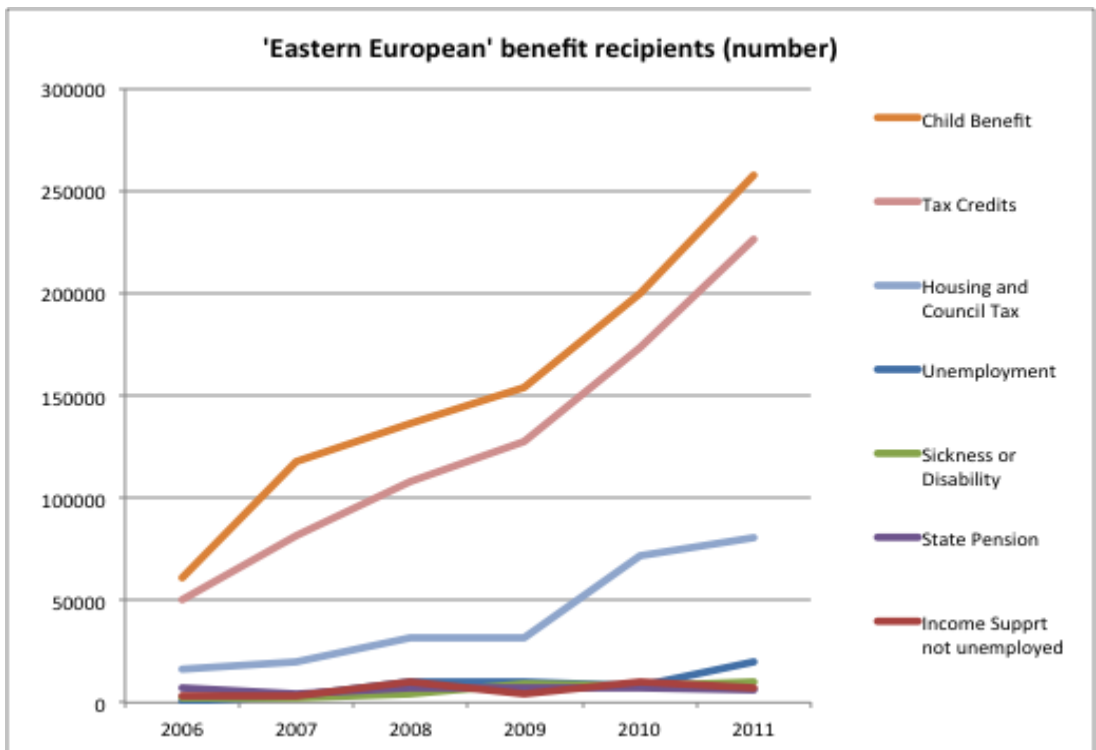


Fig.26

88. The potential impact can be further illustrated by the extent to which cash benefits contribute to household income. The state pension has been excluded because of the small proportion of recent migrants receiving it, and this of course *reduces* the proportion of benefits in household income.

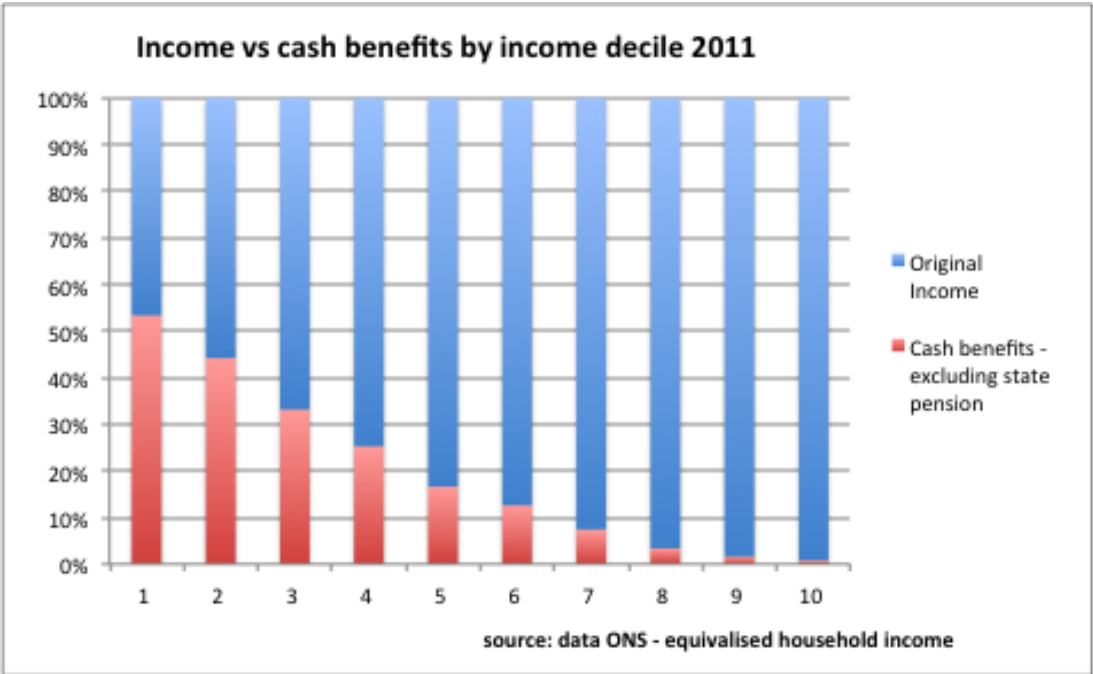


Fig.27

89. This indicates that overall even the third income decile will not cover through taxes on original income even the cost of working-age and family cash benefits paid to them, let alone the public goods that account for two-thirds of government spending.

## Analysis in the paper, issues arising and adjustments

90. Taking the data extracted and used by Dustmann and Frattini at face value, we have considered whether the basis for their allocation of revenues and expenditures seems reasonable, and if not, we have examined the potential impact of any mis-allocation.

91. For the period since 2000, their own findings show a total fiscal cost of immigration of some £70bn at 2011 values, yet they claim that *“Immigration since 2000, in particular from the EEA countries, has thus helped to reduce the fiscal burden for native workers, and contributed to reducing the UK’s fiscal deficit.”* They also appear to suggest that their results imply a trend that will result in an increasing and positive overall contribution made by migrants. *“One unique aspect of our work is that by covering many years, we avoid the caveat that the strong cyclicity of immigrations’ fiscal effects may generate results that hold only for the short term. Our findings are therefore likely to present a far more robust long term picture”.*

92. In fact the authors found no overall positive contribution in any of the years they examined, as illustrated in paragraph 6 above. If the post-2000 wave of migrants has not in fact contributed far more in taxes than they received in benefits, then the only robust long-term picture would appear to be a continued negative one in terms of the fiscal effect of immigration to the UK.

93. By the misallocation of revenues to these recent migrants, and the understatement of expenditures on them Dustmann and Frattini incorrectly assess the fiscal impact of migrants arriving during the period 2001-2011 and are wrong to *“thus conclude that the recent wave of immigrants, those who arrived to the UK since 2000, and who have driven the stark increase in the UK’s foreign born population, contributed far more in taxes than they received in benefits.”* Their *‘precise estimates’* for both revenues and expenditures in fact derive from incorrect or over-simplified assumptions that will result in obvious distortions in key areas.

94. We have assessed the likely direction and degree of distortion where our knowledge of Dustmann and Frattini’s methodology and/or available data allow. A knowledge of the actual amounts allocated under these and the other headings by Dustmann and Frattini would enable a more comprehensive review. Our assessment suggests the following adjustments, the final column showing the total to be deducted from their estimates of overall fiscal effect.

Table 6

EEA migrants arriving after 2000: adjustments to Dustmann and Frattini estimates (£m)								
	Deductions from revenues					Additions to expenditures		
	Personal taxes	Company taxes	VAT and indirect taxes	Council tax and IHT	Business rates	Tax credits	Housing benefit	total difference
2001	0	75	16	18	0	0	0	108
2002	16	92	28	27	12	0	0	174
2003	33	97	44	33	23	0	0	230
2004	57	165	67	49	37	0	10	384
2005	124	336	128	78	80	48	24	817
2006	220	473	211	108	139	126	39	1,316
2007	662	684	468	155	369	210	112	2,658
2008	1073	691	674	167	644	318	189	3,756
2009	1044	476	654	170	652	389	178	3,565
2010	1036	708	713	213	660	558	200	4,089
2011	1358	783	869	225	955	646	317	5,152
totals	5,623	4,579	3,871	1,242	3,571	2,294	1,070	22,249

Table 7

Non-EEA migrants arriving after 2000: adjustments to Dustmann and Frattini estimates (£m)								
	Deductions from revenues					Additions to expenditures		
	Personal taxes	Company taxes	VAT and indirect taxes	Council tax and IHT	Business rates	Tax credits	Housing benefit	Total difference
2001	0	226	39	54	0	0	0	319
2002	97	326	111	94	70	0	0	698
2003	197	380	202	130	137	0	0	1,045
2004	290	567	274	167	189	230	52	1,770
2005	284	852	310	199	184	276	54	2,159
2006	476	1,036	436	236	300	330	85	2,901
2007	756	1,185	597	269	421	391	128	3,747
2008	909	1,277	679	308	545	417	160	4,296
2009	875	913	662	326	547	421	150	3,894
2010	874	1,157	691	348	557	398	169	4,194
2011	1,016	1,316	815	378	715	576	237	5,053
totals	5,774	9,234	4,817	2,509	3,666	3,039	1,035	30,075

95. The following table reproduces detail from CReAM's Table 5 summary results and adds matching results to show the overall effect of our adjustments

Table 8

Summary results					
<b>Panel A: 1995-2011</b>					
	Natives	EEA	Non-EEA	Recent EEA	Recent non-EEA
<i>Overall net fiscal contributions (million, 2011 GBP equivalent)</i>					
CReAM findings	-604,529	8,775	-104,176		
MW adjusted	-565,254	-13,578	-134,914		
<i>Ratio of real revenues to real expenditures</i>					
CReAM findings	0.926	1.036	0.864		
MW adjusted	0.932	0.945	0.826		
<b>Panel B: 2001-2011</b>					
	Natives	EEA	Non-EEA	Recent EEA	Recent non-EEA
<i>Overall net fiscal contributions (million, 2011 GBP equivalent)</i>					
CReAM findings	-624,120	8,978	-86,820	22,106	2,942
MW adjusted	-586,191	-13,353	-116,769	-253	-27,170
<i>Ratio of real revenues to real expenditures</i>					
CReAM findings	0.894	1.045	0.851	1.339	1.019
MW adjusted	0.9	0.934	0.801	0.996	0.83

96. *These adjustments change the fiscal impact of the recent wave of migrants who arrived in the UK since 2000 from Dustmann and Frattini's estimation of a positive contribution of near £25 billion to a negative contribution of £27 billion instead. And the overall fiscal impact of immigration from a cost of £96 billion to a cost of £148 billion.*



## General conclusions

97. The analysis in this paper points to some clear conclusions.

- a. On Dustmann and Frattini's own findings, there was no positive fiscal impact from migration in any year.
- b. Migration to the UK since 2000 did not have a positive fiscal impact either.
- c. The claim that recent EEA migrants contributed 34% more in revenues than they received in state expenditures is simply wrong. It relies on assumptions that employees earn the same as the UK-born population when their own figures show they do not, that self-employed migrants contribute far more than those employed when they have no evidence of this whatsoever and – wholly unrealistically - that all of them own the same investments, property and other assets as the UK-born and long-term residents from the day they arrive in the UK.
- d. Similarly the claim that recent EEA migrants are only half as likely to claim 'benefits or tax credits' is highly misleading. In the context of establishing the fiscal cost what matters is the amount people receive, and different benefits pay different amounts to different people. Recent EEA migrants are much more likely to receive tax credits than the UK-born population, and more likely to receive housing benefit, and these are likely to be paid at higher rates in view of their lower incomes
- e. In fact, on less unreasonable assumptions, there was no positive fiscal impact at all from the recent EEA migrant group singled out by Dustmann and Frattini for their very positive contribution.
- f. Migration to the UK continues to have a significant fiscal cost, and recent migrants in fact made no difference to the upward trend.

## Annex A: Alternative scenario - Marginal cost

### Pure public goods

1. Dustmann and Frattini allocate expenditures referred to as 'pure public goods' on the basis of 16+ population share. Some expenditures cannot be directly or easily attributed on the basis of individual characteristics, and where this is the case they have been assumed to have been spent to the equal benefit of everyone in the adult population. This is the average cost method.

2. However, some of these expenditures will not vary in proportion to the size of the population, and a different approach is to say that the cost to be allocated to migrants should take account of the extent to which they do vary. This is the marginal cost method. Dustmann and Frattini calculate an alternative scenario of the fiscal impact of immigration on that basis, but assume that the marginal cost for all 'pure public goods' is zero.

3. This is clearly a better than best case scenario. It is true that there are some items of expenditure where the marginal cost will be effectively zero. The cost of the UK's nuclear deterrent for example will not depend at all on population size, as the number and nature of missiles and delivery platforms required is determined by entirely different considerations. On the other hand, the cost of further development or expansion of nuclear power generation will depend very much on forecast demand for energy which is clearly influenced by population size, and the marginal cost will be little different from average cost. Indeed, where population growth requires a 'step change' like the construction of a new road or railway, the marginal cost is in fact much higher than the average cost. Williams' (2013) discussion of transport highlights the issues around the reasonableness of assuming marginal costs to be zero.

4. We have adjusted the Dustmann and Frattini alternative scenario on more reasonable assumptions than that the marginal cost is zero for all 'pure public goods'. We have allowed for a zero marginal cost for the Public and Common Services and International Services components of General Public Services, and for all Defence. We have excluded public sector debt interest from General Public Services because to assume a zero marginal cost would be to ignore the extent to which debt is incurred to avoid taxing the total population more heavily or cutting public services that are used by the total population.

5. There seems no obvious rational basis for treating the remainder of 'pure public goods' which includes for example transport, energy, communication and construction – all of which are likely to be

influenced by population size - as having overall a marginal cost lower than the average cost, bearing in mind that the marginal cost will in fact in some cases be higher than the average cost.

6. In this respect we have followed Williams in using the full set of consistent figures from the Public Expenditure Statistical Analyses 2012 (PESA)<sup>5</sup>. Taking the relevant data from table 4.3 of PESA, we have attributed public sector debt interest and economic affairs as shown in the final two columns of Table A1 below to the recent migrant groups according to adult population share, adding these to the expenditures shown in Dustmann and Frattini's Table 4b.

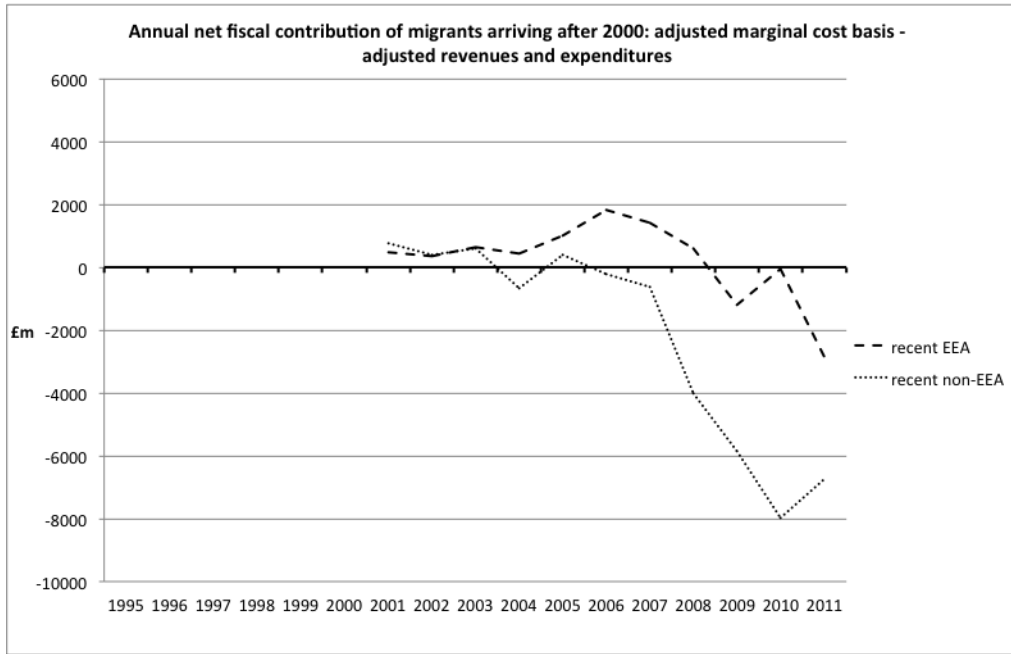
Table A1

£bn	Services	Debt interest	Defence	Transport	Other economic	Assumed marginal cost = zero	Assumed marginal cost = average cost
2001	17.2	28.9	32.4	14.4	20.9	49.6	64.3
2002	17.8	27	33.6	18.4	19.7	51.4	65.3
2003	19.5	28	35	19.8	20.4	54.5	68.3
2004	20.8	29.4	35.2	18.9	20.9	56	69.2
2005	22	30.9	35.8	19.6	21.2	57.8	71.8
2006	21.4	32.3	36.2	22.4	19.9	57.6	74.7
2007	21	34.4	37	22.5	18.4	58	75.4
2008	22.6	33.5	39.3	22.6	28.6	61.9	84.6
2009	22.8	32.4	39.7	24.2	24.5	62.5	81.1
2010	22.1	46.1	40.1	22	16.9	62.2	85
2011	21.8	47.6	39.1	20.3	14.7	60.9	82.5

7. The results illustrated below for recent migrants, applying our adjustments from the main paper are little different from calculations on the average cost basis shown at Fig. 4 above.

<sup>5</sup> HM Treasury: Public Sector Statistical Analyses 2012, Cm8376 July 2012

Fig.A1



A full summary table for a marginal cost scenario on this basis following the presentation of CReAM's Table 5 for average cost is below.

Table A2

Summary results

**Panel A: 1995-2011**

	Natives	EEA	Non-EEA	All migrant
<i>Overall net fiscal contributions (million, 2011 GBP equivalent)</i>				
CReAM findings	-740,851	48,198	-6,235	41,963
MW adjusted	-558,547	-7,870	-132,128	-139,998
<i>Ratio of real revenues to real expenditures</i>				
CReAM findings	0.912	1.252	0.99	1.051
MW adjusted	0.933	0.965	0.821	0.855

**Panel B: 2001-2011**

	Natives	EEA	Non-EEA	Recent EEA	Recent non-EEA	All migrant
<i>Overall net fiscal contributions (million, 2011 GBP equivalent)</i>						
CReAM findings	-728,353	41,140	-13,225	36,102	28,501	27,915
MW adjusted	-580,547	-7,951	-111,941	2,683	-23,910	-119,892
<i>Ratio of real revenues to real expenditures</i>						
CReAM findings	0.878	1.264	0.973	1.775	1.233	1.044
MW adjusted	0.902	0.957	0.799	1.044	0.839	0.839

## Congestible public goods

8. This assessment focuses primarily on payments of money to the government and receipts of money from the government. The more general issues arising from consideration of how other government spending should be put in the fiscal balance of migration are worth further examination. The question arises not only of the allocation of cost of 'pure public goods' as above, but 'congestible public goods' too.

9. Dustmann and Frattini's estimation of the cost of providing 'congestible public goods' is essentially an average cost method, seeking to identify the numbers of users of services like education and health, and sharing the cost equally among them. So if more migrants are in schools, an increasing proportion of the cost of education is allocated to them. That is arguably reasonable so long as the increase in pupil numbers can be accommodated within existing provision. For example, if a school has five classrooms and five teachers, more children can be put into each classroom, with no change to the overall cost and a reduction in the average cost, but only up to a point, and of course no account is taken of the disbenefit arising from the increase in class sizes and pupil/teacher ratio. A tipping point will occur when a new classroom is required and/or a new teacher. At this point the overall cost and the average cost will increase. Even though superficially everyone will benefit from the spending, the increase in cost will have been caused by the increasing numbers of migrants (or their children) in schools, and the benefit to the existing population is only the curing of the disbenefit caused in the first place by overcrowding.

10. To illustrate the principle, for example where a road has become so busy or fast that local residents feel it unsafe to cross, a controlled crossing or speed cameras could be provided. It is the residents who benefit from the crossing or the reduced speeds and on this basis the cost should be allocated to local residents. On the other hand the spending was required because of the increase in traffic, or drivers travelling too fast, and on that basis the cost should be allocated to the motorists. The latter seems preferable because if car numbers or speed had not increased, the expenditure would not have occurred, and the cost should be allocated to the motorists even though they derive no benefit from the spending as their journeys take longer. That would apply even if the cost were directly covered by the motorists e.g. through hypothecation of motoring taxes, or through road tolls or speeding fines.

11. On this basis increases in spending resulting from population growth, to the extent that the population growth is caused by migration, should as a matter of general principle be attributed to migrants, regardless of the extent to which they benefit from them. However, if the new goods or services provided are better than those replaced, for example if population growth requires the

building of a new school classroom which is better equipped, not draughty etc., then it is arguable that the cost of enhancement is not attributable to migration, because while the 'basic' cost is driven by migration, the improvement element is essentially discretionary and should be allocated to all who benefit from it.

12. An example would be if someone had to change from an ordinary car to a people carrier because they had a new baby. The cost of changing to a larger vehicle otherwise the same in terms of age, mileage, specification etc., is clearly attributable entirely as a marginal cost to the new child. But if the opportunity is taken to buy a vehicle that is newer or lower mileage etc., then arguably the further additional cost should be allocated to and shared amongst all the occupants.

13. This means a task of some complexity in precisely estimating the correct allocation of expenditures, but it is clear that a simple averaging of cost over all users as Dustmann and Frattini do, is not only imprecise, but liable to be inaccurate by allocating spending on the basis of who benefits not on the basis of what causes it. This will be distortive where costs are growing over time because of the numbers of users, and the distortion in those circumstances is always more likely to be an underestimation, as the marginal cost of new users is likely to be higher than the average cost for the reasons described above. It is only if there were no growth in spending *and* no disbenefit from new users (e.g. if there were spare capacity) that the marginal cost would tend to be lower than the average cost.

## **Annex B: General reliability of data used in the paper and issues arising**

1. The amount of positive fiscal contribution claimed by Dustmann and Frattini varies greatly from year to year, yet the change in the migrant population does not show that variation, resulting in significant variation in fiscal contribution per capita, whether on the basis of the total recent EEA migrant population or of those in employment. The reasons for this are not entirely clear. The variation per capita in the revenue or expenditure that is allocated to recent EEA migrants on the basis of population share does not derive from variation in the total revenue or expenditure in question, as there would be similar variation per capita in the total population. This is not so, Tables 1a, 1b, 2a and 2b in the CReAM report showing the divergence from the native population especially from 2000 and from 2004 for recent EEA migrants.

2. As previously noted, the authors do not break down their allocation of either revenues or expenditures in any year, nor reflect on the variation, nor consider the implications of the clear downward trend. However, a number of general issues are apparent.

3. The 'Recent EEA' group – accounting for 93% of the claimed positive contribution from recent migrants - comprises some countries that were EU member states throughout the period 2001-2011, some joined during the period, and some are not EU member states. The composition of the flow of migrants from this range of countries has varied considerably over the period, meaning that there has been no consistency within the group. This is starkly illustrated by examining the composition of the sample used by Dustmann and Frattini at the start and end of the period. It is notable that by the end of the period some 70% of the sample was from the EU A8 and Romania and Bulgaria. At the beginning of the period 70-80% were from the EU14, so their relative proportions have reversed [tables below].

4. The prime source of information used by Dustmann and Frattini is the UK Quarterly Labour Force Survey. While this is the most widely based survey generally used for the examination of the UK population, for the group of recent EEA migrants the sample size underpinning some key calculations is extremely small, and the quarterly change in some of the variables shows that some results are of questionable accuracy. This applies to the 'whole sample' results particularly for the start of the period 2001-2011, but also throughout the period for some of the variables. For example, the total sample in the first quarter contains fewer than 50 people, halfway through the period it contains fewer than 1,000 and by the end of the period the sample size is around 2,000.

And some variables have significantly fewer values than the total number in the sample. The authors seem to have understood this to be a problem, and say that that they have aggregated quarterly data to increase sample sizes. However, if there is some distortion caused by the small sample being unrepresentative, this is not necessarily cured by aggregation. The Quarterly Labour Force Survey is carried out in waves, with each respondent questioned over five quarters as in Table B1.

Table B1

Y1Q1	Y1Q2	Y1Q3	Y1Q4	Y2Q1	Y2Q2	Y2Q3	Y2Q4	Y3Q1	Y3Q2
Wave 1	Wave 1	Wave 1	Wave 1	<i>Wave 1</i>					
	Wave 2	Wave 2	Wave 2	<i>Wave 2</i>	<i>Wave 2</i>				
		Wave 3	Wave 3	<i>Wave 3</i>	<i>Wave 3</i>	<i>Wave 3</i>			
			Wave 4	<i>Wave 4</i>	<i>Wave 4</i>	<i>Wave 4</i>	<i>Wave 4</i>		
				<i>Wave 5</i>	<i>Wave 5</i>	<i>Wave 5</i>	<i>Wave 5</i>	Wave 5	
					<i>Wave 6</i>	<i>Wave 6</i>	<i>Wave 6</i>	Wave 6	Wave 6
						<i>Wave 7</i>	<i>Wave 7</i>	Wave 7	Wave 7
							<i>Wave 8</i>	Wave 8	Wave 8

5. In the shaded period – taking the first quarter of year 2 – the LFS sample will include a group of people being questioned for the fifth time, a group being questioned for the fourth time etc. So across a year, as highlighted in italics, the same people are questioned in different quarters. Thus for a survey population of 100 comprised of five waves of 20 people, aggregating four quarters does not increase sample size to 400, but only to 160. Further, because the waves repeat across quarters, aggregation of data might actually result not just in effective double-counting of any distortion sought to be avoided, but double-double-counting of it. Finally, even aggregating four quarters still means that the underlying samples are very small, especially in the earlier years. For example, the samples for the first four quarters is likely to have been

Table B2

	2001Q2	2001Q3	2001Q4	2002Q1
Belgium	0	0	0	0
Denmark	4	5	6	5
France	13	10	22	22
Germany	1	3	12	15
Greece	0	0	2	0
Ireland	3	4	12	16
Italy	2	5	9	11
Luxembourg	0	0	0	0
Netherlands	4	6	8	13
Portugal	5	9	12	14
Spain	1	0	6	8
Austria	0	0	0	0



Cyprus	0	0	1	4
Finland	0	3	8	7
Malta & Gozo	0	0	1	1
Norway	0	0	0	3
Sweden	0	1	2	8
Former Yugoslavia	4	9	7	13
Bulgaria	0	0	0	3
Former Czechoslovakia	2	6	6	7
Hungary	0	0	2	6
Poland	2	3	4	4
Romania	1	3	4	3
Former USSR	3	4	14	18
Other Europe	0	0	0	0
<b>Total</b>	<b>45</b>	<b>71</b>	<b>138</b>	<b>181</b>

6. Even in recent years as the overall numbers in the sample increased, some of the relevant countries appear to have no representation at all in particular quarterly samples from the LFS. For example, Slovenia, Luxembourg and Iceland regularly disappear throughout. This means that whole 'recent migrant' populations from particular countries can come and go from one period to the next, and others can easily double or halve as the number of respondents change from 1 to 2, or from 4 to 2.

7. The final sample is likely to have been:

Table B3

Austria	3	Lithuania	189
Belgium	27	Luxembourg	1
Bulgaria	57	Malta	7
Czech Republic	57	Netherlands	33
Denmark	19	Norway	9
Estonia	8	Poland	905
Finland	10	Portugal	67
France	93	Romania	125
Germany	143	Slovakia	88
Greece	37	Slovenia	1
Hungary	38	Sweden	22
Iceland	2	Cyprus	10
Ireland	97	Spain	59
Italy	85	<b>Total</b>	<b>2292</b>
Latvia	100		

8. The countries listed are different from the earlier samples. While Dustmann and Frattini use country of birth as the identifier of migration, this was not consistently categorised before the Jan-March 2007 quarter and it is not clear how they have dealt with categories that have changed over time that include some EEA countries and some non-EEA countries. For example prior to 2007, the variable

Country of Birth 'former Yugoslavia' includes Serbia as well as Slovenia and 'former USSR etc' includes Belarus as well as Estonia. It is possible that for periods prior to 2007 they have used a different LFS variable for identifying migrants from some or all countries, but obviously this means either adding apples to pears or switching horses mid-stream.

9. Even where the country is both consistently identifiable and is large enough to be present throughout the series, further variables can reduce the subset sample size such as to deliver results that are almost certainly incorrect. For example, self-employment status is used by Dustmann and Frattini as the entire basis for allocation of revenues arising from Business rates, but in Q12005, mid-way through the period with a total recent EEA sample size of around 1,000, no self-employment at all is reported for anyone arriving in the previous four years from either Germany, Belgium, Spain, Portugal or the Netherlands, a group which the survey weighting suggests amounts to over 50,000 people. This illustrates the risk of magnifying inaccuracy through aggregation to increase sample size, as assuming the 'waves' in question give a sample that is not representative of the population, any distortion will become more concentrated rather than diluted.

10. Putting all of these sampling and underlying data issues together means that it is very likely that the results used to allocate revenues whether top-down or bottom-up need to be treated with particular caution in the earlier years of the period 2001-2011, and this might be responsible for the very high per capita figure for recent migrants in 2001 and large swings in per capita contribution in the following years. With a breakdown of Dustmann and Frattini's revenues and expenditures by category it would be possible to make some assessment of the likely impact, even without further details of their methodology.

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