

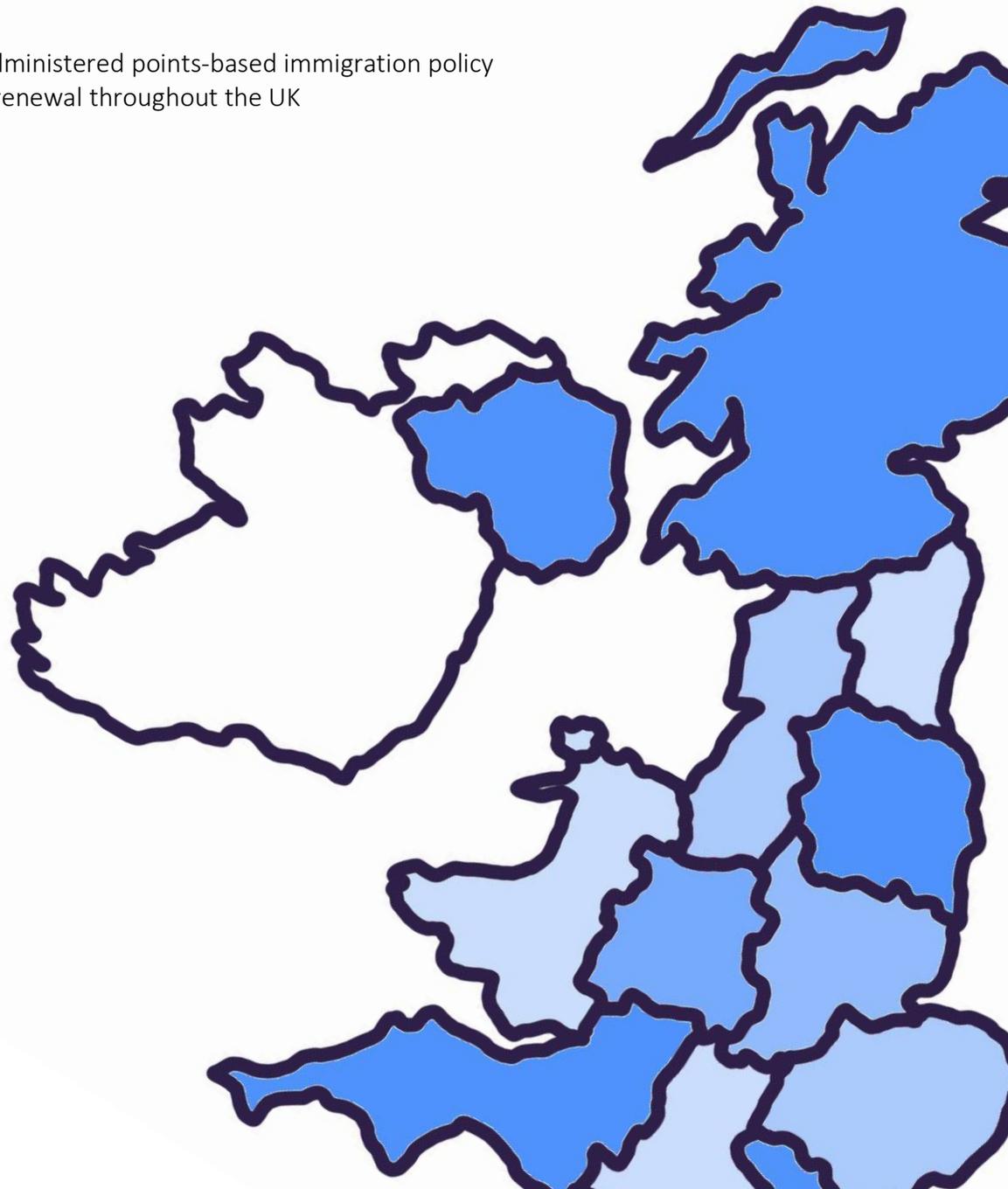
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Robert Sutton

Envisage

# Envisage

A local authority-administered points-based immigration policy  
to drive economic renewal throughout the UK



## ***Introduction***

The Covid-19 pandemic has brought about the most significant distortion of the labour market in the last 70 years. Restrictions on movement and jobs coupled with eye-wateringly high levels of public spending will mean that, as Britain emerges from the pandemic, labour markets will be misaligned by this prolonged decoupling of supply and demand.

Radical policy ideas are needed to ensure a rapid realignment and to supercharge growth, employment, and living standards, particularly in those “left behind” areas which have been particularly hard-hit. The Conservative party’s overwhelming victory in the 2019 general election was a vindication of clearly articulated policy proposals, prominent among which are the end to free movement of people and the economic renewal of so-called “left behind” regions of the UK.<sup>1</sup>

These 2 goals require an immigration policy which allocates human capital in an efficient manner and which complements local needs. How can we facilitate the movement of people to maximise the potential of the UK’s different regions while safeguarding individual choice and minimising central government market interference?

Local governments are clearly better placed than the national government to identify the needs of their labour markets. They are better attuned to the local political, social and economic picture and, if they were given a stake in procurement of labour through influence of immigration policy, their political future would be coupled to the immediate success of those policies.

In looking for a balance between national government control of immigration, local government’s identification of economic needs and the preservation of individual freedom in choosing where to live and work, this paper takes inspiration from mechanism design and modern auction theory. Amending the design of an immigration policy does not need to be a zero-sum game.<sup>2</sup>

By improving the process we can simultaneously identify and direct workers towards regions where their skills are most needed while respecting worker choices about where they would like to take their skills by using information and incentives more effectively. “Levelling up” cannot be achieved simply by splashing taxpayer cash. Expensive infrastructure, once put in place, needs to have the people in place to make it work and to drive economic renewal. This paper’s policy proposal, *Envisage*, has 3 key features:

- 1) A points-based immigration system
- 2) Administered by local governments at a regional level

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<sup>1</sup> [“Election results 2019: Boris Johnson’s victory speech in full,”](#) BBC News, 13 December 2019.

<sup>2</sup> *Envisage* takes inspiration from modern auction theory and mechanism design. The 2020 Nobel Memorial Prize in Economic Sciences was awarded to Paul R. Milgrom and Robert B. Wilson “[for improvements to auction theory and inventions of new auction formats.](#)” These formats not only produced significant financial gains for government and taxpayers but also facilitated trade for corporations by reducing uncertainty: “*auctions are not zero-sum games. On the contrary, the whole point of an auction is to create as much value as possible by assigning an object to the buyer who can make the best use of it.*”

- 3) With variable points thresholds for visas in different sectors decided by local government according to their need

*Envisage* allows local governments to take the lead in setting sector-specific points thresholds to reflect local labour demands, while allowing prospective visa applicants to prioritise different locations for work. The UK government, who serves as a broker between local authorities and individual visa applicants (Figure 1), effectively facilitates a reverse auction to allocate visas. The process is efficient, meritocratic, minimises arbitrary national government intervention and empowers local communities to take those policy decisions which will make levelling up a reality.

### ***Why not a single national scheme?***

The government has introduced a new points-based immigration system for the UK.<sup>3</sup> Yet there are problems with a “one-size-fits-all” approach. The UK’s regional economic variations are complex and nuanced, and attempting to apply blanket criteria risks undermining the Government’s “levelling up” agenda.<sup>4</sup>

The information asymmetry between those living and working in a given community and a distant central government office is vast. Requiring a rigid points-based framework be applied equally to a rural agricultural community, a metropolitan financial hub and a major manufacturing centre will inevitably be stifling. Requiring all parts of the UK to fit uniformly within the same system risks disincentivising innovation and neglecting region-specific economies.<sup>5</sup>

The UK is not a homogeneous labour market and regional shortages are a major factor which could hold back levelling up. According to a report from *Prospects*<sup>6</sup> on UK skills shortages:

*“In the East Midlands, like in most regions, nursing has the most hard-to-fill vacancies ... The East of England has the longest list of shortage occupations and these include medical practitioners, nurses, design and development engineers, veterinarians and business executives ... Solicitors and legal professionals are in particular short supply in the South West ... There are notable engineering shortages in the West Midlands ... Yorkshire struggles to recruit electrical engineers, IT operations technicians and child and early years officers.”*

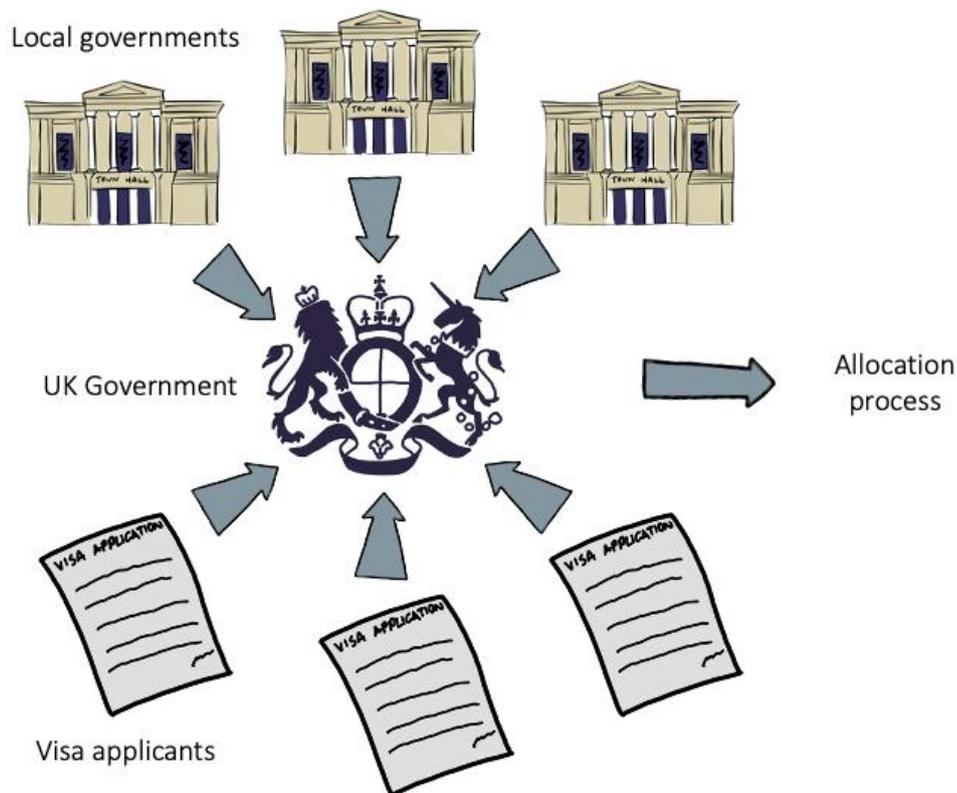
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<sup>3</sup> “...we will not introduce regional salary thresholds or different arrangements for different parts of the UK.” from [“The UK's points-based immigration system: policy statement,”](#) Home Office, 19 February 2020.

<sup>4</sup> “Questions have been asked about whether the use of national salary thresholds, and the absence of any concessions for lower-income regions, will result in a system which favours employers in higher-earning areas and undermine the Government’s agenda to ‘level up’ less affluent regions.” from [“The new points-based immigration system,”](#) House of Commons Library, 11 May 2020.

<sup>5</sup> For a discussion of region-specific skills shortages, see: [“Skills shortages and COVID-19,”](#) *Prospects*, July 2020

<sup>6</sup> *Ibid.*



**Figure 1:** A schematic of *Envisage*. The UK Government receives visa applications from international applicants and lists from local governments containing points thresholds for specific sectors.

The government is clear that their new immigration policy aims to prioritise high-skilled workers.<sup>7</sup> But we can see that the high-skilled workers required by one region will not be the same as those required by another. For a centralised programme to capture this information would require a byzantine corpus of immigration rules.

Yet a sufficiently complex programme would inevitably become less agile, more bureaucratic, and prone to lobbying over time. The government has expressed its desire to avoid such a system,<sup>8</sup> yet the current rules, while providing a useful starting point for a points-based framework, will ultimately struggle to meet the complex needs of the UK's different regions.

Centralised systems lack information – specifically, concentrating immigration policy decisions within the Home Office means neglecting the complex economic, social and political demands specific to each region of the UK. Further, if it fails to meet those needs, it is generally isolated from the immediate political consequences. Incentives are effectively decoupled.

<sup>7</sup> “We are ending free movement and will introduce an Immigration Bill to bring in a firm and fair points-based system that will attract the high-skilled workers we need to contribute to our economy, our communities and our public services. We intend to create a high wage, high-skill, high productivity economy.” Ibid.

<sup>8</sup> “The Home Office will continue to refine the system in the light of experience and will consider adding further flexibility into the system including additional attributes that can be ‘traded’ against a lower salary. For example, this might include a greater range of qualification levels or other factors such as age or experience studying in the UK. However, we need to guard against making the system too complex.” Ibid.



**Figure 2:** The first step of the visa allocation process. Having received list of regional visa thresholds for different sectors and visa applications (including a rank-ordering of regions they would like to work in) from individual applicants, the current round closes. The visa applicants are sorted according to sector (in this case, architects are shown in orange, software engineers in green, and nurses in blue). They are then rank ordered within their sector, from most visa points to least.



**Figure 3:** The second step of the allocation process. Within each sector, starting from the applicant with the highest number of points, applicants are assigned to a region. Each applicant is assigned their highest preference region for which they have sufficient points. The process is meritocratic, efficient, and allows regions to recognise different sectors within their local labour market where there are either shortages or excesses.

Some attempts have been made to make sure this points-based immigration policy is adaptive,<sup>9</sup> but the process is slow and reliant on central government. Arguments that sector shortages must be dealt with using “technology and automation”<sup>10</sup> risk causing unnecessary

<sup>9</sup> “We agree with the MAC’s recommendations there should be a more regular pattern of major and minor reviews of the SOL in future, and the first major review should not take place before 2022. We do not intend to commission a minor review this year, making the major review in 2022 the first under this new approach. We will set out further details when this review is commissioned.” from [“Letter to the Migration Advisory Committee on changes to the shortage occupation list \(accessible version\)”](#), Kevin Foster MP, Minister for Future Borders and Immigration, 4 March 2021

<sup>10</sup> “We need to shift the focus of our economy away from a reliance on cheap labour from Europe and instead concentrate on investment in technology and automation. Employers will need to adjust.” from [“The UK’s points-based immigration system: policy statement”](#), Home Office, 19 February 2020.

economic hardship, particularly when studies indicate that many sectors which have the most severe shortages are not amenable to such solutions.<sup>11</sup>

To truly support economic renewal throughout the UK requires local communities (with their local governments acting on their behalf) to identify economic priorities and influence the flow of labour accordingly. *Envisage* makes this possible while dramatically reducing the need for central government bureaucracy.

### ***Envisage: an overview of the scheme***

*Envisage* takes inspiration from modern auction theory to give local governments a stake in national immigration policy. It allows them to meet the demands of their local labour markets and truly drive economic renewal. It is a points-based system and would fit well with the UK Government's current framework.<sup>12</sup> Points could be awarded for: holding a job offer, English-language proficiency, salary, and educational attainment level. While the points would be assigned by a common framework, the points threshold for a given sector would be set by the local government. The scheme would work as follows:

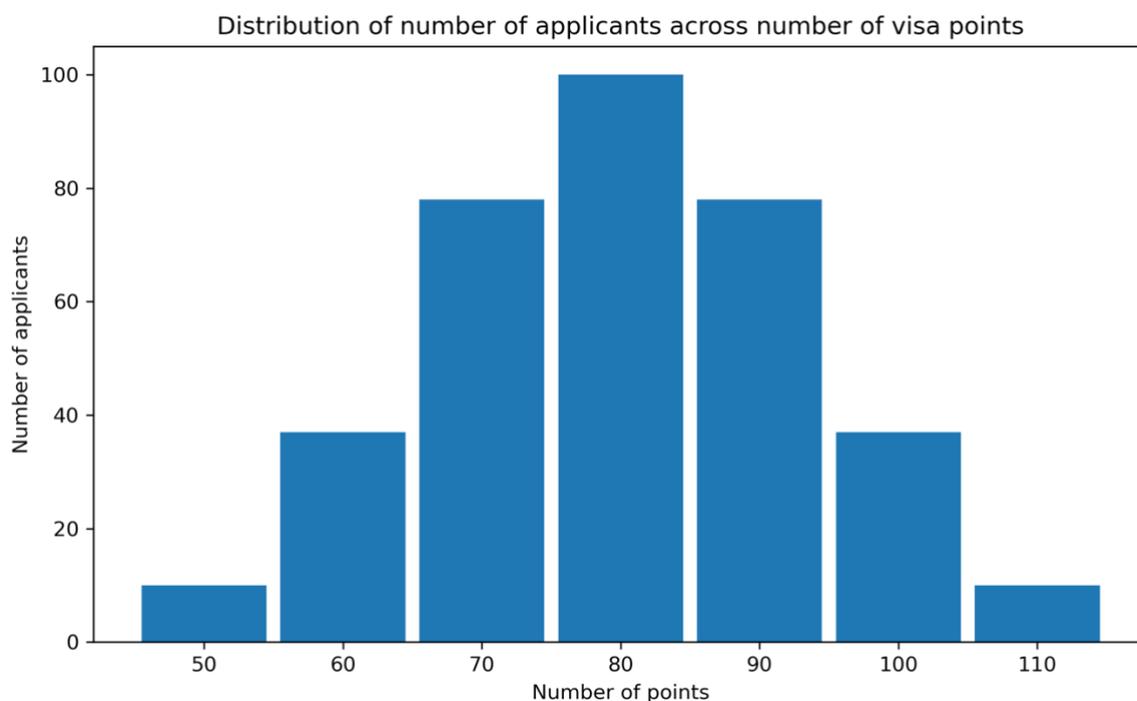
1. **Central government assigns any regional conditions.** At the start of each round, the government may choose to assign conditions to each region (although this is not necessary). Such conditions might include regional caps on visa issuances to allow greater control over net immigration within the UK or to prioritise certain regions. The regions considered in this model are at the level of government office regions but could equally be applied at the level of constituencies, unitary authorities, etc.
2. **Local governments submit sector-specific points thresholds.** To decide these thresholds, they would consider their evolving local labour market needs (a new hospital, car manufacturing plant or business park, for instance) and the results of previous allocation rounds. These thresholds are not seen by other local authorities or visa applicants until after the round is complete.
3. **Visa applicants submit rank-ordered preferences.** Simultaneously, visa applicants submit a rank-ordered list of regions where they would prefer to work.
4. **Ordered ranking performed.** After the current round closes, the national government applies *Envisage's* allocation algorithm (Figures 2 and 3) to assign region-specific visas to applicants. The highest-ranked applicants are assigned visas first and allocated to the highest ranked region for which they have sufficient points. Applicants and local authorities are informed of the outcome of the allocation process.

For those successful in obtaining a visa but do not yet hold an offer of employment, there is a 12-month time window in which work must be found within that sector and within that region. From the date of starting work, the condition that it must be within the region of first allocation lasts for 24 months – after that point, the sector- and region-specific conditions for ongoing work are relaxed.

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<sup>11</sup> "However, automation is unlikely to relieve the acute talent shortages that the Occupational Talent Shortage Index identifies in sectors such as ICT, professional services, and healthcare—as roles in those sectors are significantly less automatable than those in other parts of the economy" from "[The future of work: Rethinking skills to tackle the UK's looming talent shortage](#)," *McKinsey & Company*, 13 November 2019.

<sup>12</sup> "[The UK's points-based immigration system: policy statement](#)," *Home Office*, 19 February 2020.



**Figure 4:** Distribution of number of applicants across number of visa points for our model. The model used in *Simulations of the bidding process* assumes an approximately normal distribution of applicants with points ranging from 50 to 110.

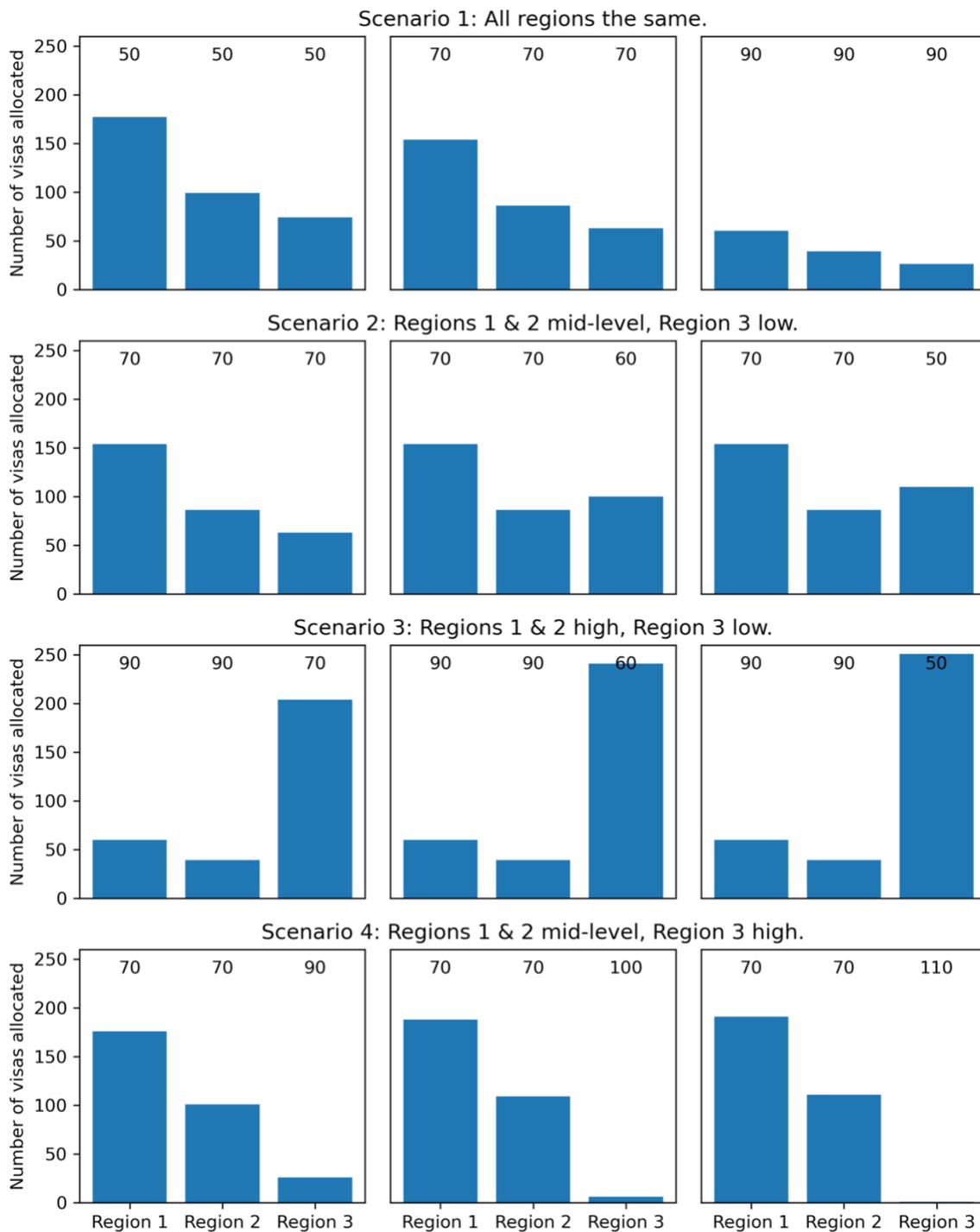
The mechanism design requires a feature to prevent all regions submitting low bids to boost their labour market and thereby creating a “race to the bottom.” One simple solution would require the total number of points assigned across the top 10 or 20 sectors<sup>13</sup> be conserved – any lowering of a visa threshold for a given sector must be met with a corresponding increase in another sector. Such a constraint would ensure that any changes to a visa points threshold must be carefully considered and truly in the best interests of that region.

### *The allocation algorithm in detail*

*Envisage* can be viewed as a sealed-bid reverse auction. The different regions, in assigning points thresholds for different sectors, are effectively submitting a “bid” while being blind to the bids of competing regions in a given round. Where the needs of a given region dictate that certain sectors would benefit from an expanded labour market, a lower “bid” will result in a higher assignment of applicants to be given a right to work in that region (see *Simulations of the bidding process* below for more detail).

For the applicants, the process is meritocratic – an applicant with more points will have more regions open to them. But even an applicant with low points will have their preferences respected, being assigned a region-specific visa for their highest ranked region for which they have sufficient points.

<sup>13</sup> By only applying this to the top 10 or 20 sectors, it would prevent prospective visa applicants in less crowded sectors being unfairly penalised and would encourage a rich labour market to flourish. *Envisage* encourages competition within crowded labour markets – those in which there are large numbers of applicants and significant variation in demand across regions.



**Figure 5:** Simulations of number of visas allocated in Scenarios 1-4 above. Each figure is shown using the same scale. The visa points threshold for a given region is written above the bar plots for the corresponding figure. The different scenarios demonstrate the potential for local governments to significantly influence the movement of labour within their region through unilateral changes in visa points thresholds.

Figures 2 and 3 illustrates this process using a simplified example. This example has 3 regions (Regions 1, 2 and 3) and 3 possible sectors (architecture, software engineering and nursing). Having received all sector-specific points threshold lists from the 3 local governments and having received all visa applications, the national government implements the *Envisage* algorithm to assign those visa applicants a region-specific visa.

The assignment process is straightforward, meritocratic, and sensitive to local demands. It simultaneously optimises applicant preference and regional labour market demands. First, visa applications are sorted according to job sector, and within each job sector, the applicants are ranked from most points to least points (Figure 2). Then, working down the list, each applicant is assigned a visa for the highest ranked region according to their preference list for which they have sufficient points (Figure 3).

In this worked example, Region 2 has a relatively high threshold of 90 points for software engineers, indicating low demand or a highly competitive market (perhaps the region is already a leader in software engineering and only seeks further applicants where they are very highly qualified). In Region 3, a lower threshold has been set for nursing, indicating high local demand (perhaps a new hospital is to be built in the region, or there have been long-term shortages).

By setting a lower threshold Region 3 has more applicants assigned to it relative to Region 1 and Region 2 for nursing. The process serves to balance regional economic and political considerations with the personal preferences of applicants, and to assign them in an efficient manner.

### ***Simulations of the bidding process***

I wrote a short simulation programme to test the algorithm. I again used only 3 regions and I assumed that the number of points ranged from 50 to 110 in intervals of 10, and that they were spread in an approximately normal distribution (Figure 4).

I assume this distribution held regardless of where an applicant picked as their first choice. I also assumed, however, that applicants would preferentially choose certain regions over others as their first choice: specifically, 50% choose Region 1, 30% Region 2 and 20% Region 3 as first choice. There was then a 50-50 chance which of the remaining regions would be ranked second and which ranked third. Simulations were run to test a range of different scenarios:

**Scenario 1: Each region chooses the *same* points threshold.** With each region applying the same points threshold (indicating the same need for workers), the distribution is determined by the first preferences of applicants – 50% to Region 1, 30% to Region 2 and 20% to Region 3. Increasing the points threshold decreases the net number of visas allocated.

**Scenario 2: Region 3 chooses a *low* threshold while the other regions choose a *mid-level* threshold.** All regions except Region 3 apply a fixed points threshold of 70. As Region 3 decides to unilaterally lower their threshold (say, in response to an initiative to expand that sector), the proportion of applicants allocated to that region increases.

**Scenario 3: Region 3 chooses a *low* threshold while the other regions choose a *high* threshold.** In this scenario, we have the same effect as in Scenario 2, but with a much higher allocation of workers to the Region 3. As other regions have high thresholds (indicating a low

interest in employing workers in that sector), only a small proportion of applicants will be allocated to those regions. Region 3 will take a far higher proportion of applicants.

**Scenario 4: Region 3 chooses a *high* threshold while the other regions choose a *mid-level* threshold.** In this scenario, Region 3's high threshold indicates a low interest in issuing further visas for that sector (for instance, a major employer may have just left the area or made mass redundancies, flooding the market locally). Few applicants will be granted a visa for Region 3.

### *Discussion and concluding remarks*

Mechanism design is not a zero-sum game. A well-designed allocation mechanism can bring benefits to workers, employers, the broader economy, and the taxpayer. Similarly, a poorly thought-out design can be bureaucratic, inefficient and stifling.

*Envisage* seeks to minimise central government interference and to allow local communities to chart their own path to prosperity by giving direct influence over the international flow of labour. It is also meritocratic, assigning to visa applicants the region of highest preference for which they have sufficient points and giving preference to applicants with more points. The only role played by central government in the entire process is as a neutral broker, collecting information and performing the allocation process.

There is no need for regular reviews of sector shortages by a centralised committee – these are performed automatically and coupled to the incentives of local governments who set the sector-specific points thresholds. There is no need for a Whitehall office to try to guess what sectors a region might prioritise – regions can do this themselves, directly.

And ultimately, if the central government wants to take greater control over the process, it has the power to do so (for instance by introducing region specific caps or by amending the points framework). The algorithm encourages competition and strategic prioritisation between regions and between applicants. And it rewards the people living in those regions for good strategic decision making.

The political effectiveness of this is coupled to the incentives of both the local and national government. At a local level, the incentives of political leadership to satisfy constituent demands requires that the bidding process is effectively administered, and that constituent demands are accurately identified and acted upon. At a national level, the policy insulates the Westminster government from criticism of its immigration policy (as it is administered locally) while making maximum use of greater controls on immigration in a Global Britain.

Current immigration policy proposals have yet to fully capitalised upon the opportunity given by the UK's decision to leave the EU. *Envisage*, which would offer a high level of local control over immigration policy and directly couple local demand to international labour markets (thereby revitalising those areas) would be a huge step towards seizing this opportunity.