**Appendix** **1:**

We searched hukou-reform policy documents in each prefecture-level city through Google and Baidu, including the government’s website and Baidu Wenku, an online archive platform. Some 59% of cities announced the policy in 2015, while 35.9% announced it in 2016, with only 1.3% announcing early in 2014 and 3% announcing in 2017 or later. In Appendix Table 1, we further compared the characteristics of cities[[1]](#footnote-1) that have retrievable policy documents and cities that do not have available policy documents. We found that cities with retrievable policy documents were more likely to be located in the Central region. These cities do not differ in other characteristics.

**Appendix Table 1. OLS Regression on Policy Document Availability**

|  |  |
| --- | --- |
|  | **Policy document availability** (1 = Yes; 0 = No) |
| Economic development | 0.009 |
| (nightlight density) | (0.006) |
| Proportion of non-skilled workforce | 0.679 |
|  | (0.496) |
| CPS: Home province leader | -0.000 |
|  | (0.054) |
| CPS: Degree in social sciences | 0.048 |
|  | (0.048) |
| CPS: Secretary in government | 0.032 |
|  | (0.045) |
| Intensity of labor disputes | -0.428 |
|  | (0.364) |
| Population (in 10s of millions) | 0.032 |
|  | (0.125) |
| % of migrants | -0.001 |
|  | (0.004) |
| % of ethnic minorities | -0.001 |
|  | (0.002) |
| % elderly | 0.016 |
|  | (0.021) |
| College degree holders (in 10s of | 0.485 |
| millions) | (0.565) |
| Region (ref: East) |  |
| Central | 0.315\*\* |
|  | (0.111) |
| West | 0.164 |
|  | (0.140) |
| CPS as female | 0.065 |
|  | (0.079) |
| CPS’ education (ref: PhD degree) |  |
| College/university | -0.097 |
|  | (0.075) |
| Master’s degree | -0.025 |
|  | (0.051) |
| Constant | -0.089 |
|  | (0.574) |
| N | 328 |
| Mean for outcome | 0.72 |

Notes: Each column is a separate ordinary least square regression model. Standard errors clustered by province are in brackets. *\* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001.*

**Appendix 2:**

**Appendix Table 2. Definition of Policy Indicators**

|  |  |
| --- | --- |
| **Panel 1: Selection Policies[[2]](#footnote-2)** | |
| Selection policies (total) | Total score of all policies |
| High-skilled scheme | Total score of policies targeting high-skilled migrants (high-skilled workers, college graduates, overseas returnees, and investors of all kinds) |
| Talent scheme | Total score of policies adopting the talent scheme |
| Investment scheme | Total score of policies targeting investors (including both real estate and business investors) |
| Non high-skilled scheme | Total score of policies targeting non-high-skilled migrants (all migrants & workers, low-skilled & model workers, all graduates, landless peasants, people with disabilities) |
| Points system  (stringent changes) | Total score of policies adopting the points system |
| Family reunification scheme | Total score of policies targeting family members (spouse, children, parents, grandparents and illegitimate births) |
| **Panel 2: Redefinition Policies[[3]](#footnote-3)** | |
| Redefinition policies (total) | Total score of policies issuing the residential permit or aiming to unify the agricultural and non-agricultural *hukou* system |
| Residential permit | Total score of policies issuing the residential permit |
| Urban-rural unification | Total score of policies aiming to unify the agricultural and non-agricultural *hukou* system |
| **Panel 3: Integration Policies[[4]](#footnote-4)** | |
| Integration policies (total) | Total score of all policies |
| Access to education | Total score of policies offering easier access to pre-school, compulsory, vocational, high school, and continuing education; scholarship, subsidy, and tuition waiver; entrance examinations to high school and college |
| Access to public services | Total score of policies targeting the reform of employment, social insurance, social assistance, housing, healthcare, or old-age care service/benefit |
| Employment service(s) | Total score of policies adopting any of the following employment-related tools: unemployment registration, vocational training, entrepreneurship promotion, career service and protection of labor rights |
| Social insurance(s) | Total score of policies offering easier access to social/medical/pension/unemployment/injury/maternity insurance(s) |
| Social assistance(s) | Total score of policies offering easier access to dibao, destitute support and medical/temporary/housing/educational/disaster assistance |
| Housing | Total score of policies offering easier access to any of the following: affordable/commercial/public (rental) housing, corporate dormitory, preferential housing subsidy and Housing Provident Fund |
| Healthcare | Total score of policies offering easier access to healthcare |
| Old-age service/benefit(s) | Total score of policies aiming to improve the overall coverage of old-age service/benefit(s) |
| Rural rights protection | Total score of policies aiming to protect rural migrants’ rights to agricultural property (e.g. homestead, farmland) and family planning |
| Rural property rights | Total score of policies aiming to protect the property-related rights of rural emigrants |
| Adaptation period | Total score of policies reassuring rural migrants’ exemption from urban fertility regulation in urban areas upon first several years[[5]](#footnote-5) of arrival |

**Appendix 3. Coding Description for Policy Restrictiveness and Magnitude**

**Restrictiveness** of a policy change was assessed through five aspects: 1) whether the policy expands or shrinks the pool of migrants who are granted rights; 2) whether it lowers or raises the eligibility criteria for a particular group; 3) whether it simplifies or complicates the administrative procedure for a particular migrant group; 4) whether it increases or decreases the options available to the migrant group; and 5) whether it relaxes or intensifies the control over the migrants from a particular group (De Haas, Natter, & Vezzoli, 2015). Policies are coded as *less restrictive* (value = −1) if any of the former answers holds true and *more restrictive* (value = 1)otherwise.

The **magnitude** of change captures the degree of change and provides the weight for **restrictiveness** of each policy article. The magnitude of change is measured by the extent of coverage and radicalness. A policy is only considered to have *full* coverage if the whole category of a migrant group (e.g., all migrant workers or all investors) from all origins is targeted and *partial* otherwise (De Haas, Natter, & Vezzoli, 2015). The extent of radicalness is considered *fundamental* if the policy either establishes (a) brand new system(s) (e.g., introducing a points system) or abolishes (an) existing one(s) (e.g., eliminating requirements for spouses) and *non-fundamental* otherwise (e.g., lowering the residential years from five to three; De Haas, Natter, & Vezzoli, 2015). Considering both coverage and radicalness, we measured the **magnitude** of change with four categories: 1) a *major change* (weight = 4) with *full* coverage and a *fundamental* change; 2) a *mid-level change* (weight = 3) with *partial* coverage and a *fundamental* change; 3) a *minor change* (weight = 2) with *full* coverage and a *non-fundamental* change; and 4) a *fine-tuning change* (weight = 1) with *partial* coverage and a non-fundamental change (De Haas, Natter, & Vezzoli, 2015).

For example, in Beijing, a point system is implemented as a selection policy, with the point system serving as the policy tool. The applicable migrant category and migrant origin include all migrants. This policy is more restrictive in nature, representing a significant change, and it has full coverage. As a result, the policy score for the point system is 4. In the city of Shizuishan in Ningxia province, the policy aimed at attracting family members of migrants is categorized as a selection policy. The policy tool in this case is access to local hukou (household registration). The migrant category is family members, and the policy applies to migrants from all origins. Compared to the previous policy, this new approach is more lenient in its restrictiveness, representing a major change. Furthermore, it has full coverage. Consequently, the policy score for this family reunification scheme is -4.

**Appendix Table 3.1 Extent of Coverage**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | **Migrant category** | | |
| **Whole category**  (e.g., All migrant workers,  All graduates,  Investors) | | **Partial category**  (e.g., High-skilled workers,  College graduates,  Real estate investors) |
| **Migrant origin** | **All origins**  (e.g., Locals,  Outsiders) | Full | Partial | |
| **Part of origins**  (e.g., Rural locals, Rural outsiders) | Partial | Partial | |

**Appendix Table 3.2 Magnitude of policy change**

|  |  |  |
| --- | --- | --- |
| Code | Magnitude | |
| 1 | Fine-tuning | Measures that only affect part of a migrant category and only alter an existing policy instrument are defined as fine-tuning changes. |
| 2 | Minor | Measures that affect a whole migrant category yet only alter an existing policy instrument are defined as minor changes. |
| 3 | Mid-level | Measures that affect only part of a migrant category but starts a new or abolishes an existing policy instrument are defined as mid-level changes. |
| 4 | Major | Measures that affect a whole migrant category and starts a new or abolishes an existing policy instrument are defined as major changes. |
| 0 | N/A | Measures categorized as “No change” in restrictiveness are assigned “N/A” in terms of magnitude. |
| 999 | Cannot be assessed | Consistent with the principle of restrictiveness, measures that do not give explicit instructions are labeled with this code. |

**Appendix 4**. **Construction of the variable on labor dispute intensity covered in provincial media**

We collected media reports on migrant workers and measured the frequency of employer–migrant employee disputes on text data. The provincial daily newspaper series was selected as a data source because it is the official line of newspapers of the municipal CPSs, which are the primary source of newspapers in each province and the only newspapers available across all provinces in China (Jaros & Pan, 2018). This enables us to derive comparable data on the media environment.[[6]](#footnote-6) News articles were searched on China’s National Knowledge Infrastructure using five keywords: “农民工 (rural migrant workers),” “外来打工 (migrant workers),” “外来工 (migrant workers),” “外来务工(migrant workers)” as well as “外地人(outsiders).” In total, 3,214 articles were retrieved from 2010 to 2014,[[7]](#footnote-7) among which 10% were randomly sampled by year and constituted our training data (Alpaydin & Bach, 2014). We read each of the 321 training articles and labeled them as 1 if they mentioned infringement of labor rights (e.g., overwork, wage arrears, and safety accidents) and 0 otherwise. After this, we tokenized the text based on the Chinese corpora, *jieba*,[[8]](#footnote-8) and transformed it to the sparse matrix containing all unigrams free of stop words through Python’s Natural Language Toolkit package (Bird, Klein, & Loper, 2009). Further using its *scikit-learn* module, we split the training data (321 labeled articles) into 30% pseudo-test data and 70% pseudo-training data, the latter of which was fed into the logistic regression model with grid search of parameters[[9]](#footnote-9) to predict the former (Pedregosa et al., 2011). The predictions on the pseudo-test data were then compared with their actual label and the *roc\_auc* score measured the degree of accuracy.[[10]](#footnote-10) This process was completely random and repeated five times, hence generating five sets of *roc\_auc* scores with a mean value of 0.96, ascertaining the model’s great ability to distinguish between classes. We then applied this model to the entire training data (321 labeled articles) and obtained the coefficients to predict the remaining 90% (2,893) unlabeled articles. Eventually, all 3,214 binary labels were disaggregated by province and year, resulting in a continuous variable that captures labor dispute intensity falling between 0 and 1. A higher value of this variable represents greater tension between local employers and migrant employees.

**Appendix 5:**

**Appendix Table 5. Descriptive statistics for policy predictors**

|  |  |  |
| --- | --- | --- |
| **Indicators** | **Mean / %** | **SD** |
| **Economic Factors** |  |  |
| GDP growth | 12.4% |  |
| Economic development (nightlight density) | 7.85 | 9.63 |
| Proportion of non-skilled workforce | 81.4% |  |
| Unemployment rate | 3.3% |  |
| **Political Factors** |  |  |
| Top-down control |  |  |
| Division of duties | 32.3% |  |
| Timetable | 63.4% |  |
| Tenure of municipal CPS |  |  |
| 0–20 months | 42.4% |  |
| 21–40 months | 35.1% |  |
| 41–60 months | 18.3% |  |
| 61+ months | 4.2% |  |
| Home province leader | 65.4% |  |
| Years as CCP member | 30.46 | 4.23 |
| Degree in social sciences | 52.9% |  |
| Secretary in government | 24.1% |  |
| **Sociocultural Factors** |  |  |
| Intensity of labor disputes | 0.16 | 0.09 |
| Level of integration | 0.09 | 0.35 |
| **Control Variables** |  |  |
| Population (in 10,000) | 207.00 | 158.13 |
| % of migrants | 11.0% |  |
| % of ethnic minorities | 6.6% |  |
| % elderly | 9.0% |  |
| College degree holders (in 10s of millions) | 0.05 | 0.07 |
| Proportion of welfare expenditure | 11.6% |  |
| Reliance on land conveyance income (log [10 thousand yuan]) | 13.3 | 1.5 |
| Region |  |  |
| East | 36.1% |  |
| Central | 44.0% |  |
| West | 19.9% |  |
| CPS as female | 3.7% |  |
| CPS as male | 96.3% |  |
| CPS’ education |  |  |
| College/university | 12.6% |  |
| Master’s degree | 61.8% |  |
| PhD degree | 25.7% |  |
| CPS’ age | 53.6 | 3.4 |

**Appendix 6:**

**Appendix Table 6 Policy Scores by Policy Clusters**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Overall Policies** | | | **Selection Policies** | | | **Integration Policies** | | |
|  | Least Integrative Policies | Welcomes Selective & Integrative Policies | Selective Policies | Selective Policies | Welcomes High-Skilled Workers | Welcomes Non-High-Skilled Workers | Integrative Labor Market Policies | Integrative Social Welfare Policies | Least-Integrative Policies |
| **Selection policies (total)** | -12.07 | -20.07 | -0.39 | -5.83 | -15.92 | -28.36 |  |  |  |
| High-skilled scheme | -5.55 | -6.51 | -3.06 | -3.23 | -10.75 | -10.64 |  |  |  |
| Talent scheme | -0.48 | -0.18 | -0.06 | -0.03 | -2.58 | 0.00 |  |  |  |
| Investment scheme | -2.45 | -2.59 | -1.30 | -1.13 | -4.17 | -5.50 |  |  |  |
| Non high-skilled-specific scheme | -7.38 | -9.70 | -6.53 | -7.31 | -7.83 | -11.11 |  |  |  |
| Points system (stringent changes) | 0.34 | 0.15 | 0.19 | 0.20 | 0.50 | 0.06 |  |  |  |
| Family reunification scheme | -3.03 | -5.05 | -0.30 | -1.76 | -2.92 | -6.61 |  |  |  |
| **Redefinition policies (total)** | -3.48 | -5.07 | -5.21 |  |  |  | -4.14 | -5.30 | -3.60 |
| **Integration policies (total)** | -5.93 | -32.33 | -29.57 |  |  |  | -38.11 | -29.77 | -6.23 |
| Access to education | -0.21 | -4.54 | -4.40 |  |  |  | -3.32 | -4.67 | -0.23 |
| Access to public services | -0.62 | -15.41 | -13.20 |  |  |  | -22.04 | -13.03 | -0.73 |
| Employment service(s) | -0.17 | -4.32 | -3.31 |  |  |  | -7.50 | -3.20 | -0.20 |
| Social insurance(s) | 0.00 | -3.36 | -2.52 |  |  |  | -5.79 | -2.46 | 0.00 |
| Social assistance(s) | -0.17 | -2.14 | -2.58 |  |  |  | -1.43 | -2.53 | -0.23 |
| Housing | -0.14 | -2.97 | -2.18 |  |  |  | -4.64 | -2.21 | -0.17 |
| Rural rights protection | -0.38 | -1.15 | -1.26 |  |  |  | -1.32 | -1.18 | -0.43 |

**Appendix Table 7. City by Policy Clusters**

| **Overall Policy** | | | **Selection Policy** | | | **Integration Policy** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Selective** | **Welcoming** | **Least-integrative** | **Selective** | **Welcomes Non-high-skilled** | **Welcomes High-skilled** | **Integrative Social Welfare** | **Integrative Labor Market** | **Least-integrative** |
| 恩施州  嘉兴  铁岭  嘉峪关  乐山  南京  新余  白山  河池  渭南  舟山  毕节  邵阳  宝鸡  衢州  定西  梧州  盘锦  焦作  六盘水  枣庄  抚顺  泰安  铜川  天津  辽阳  黔南布依族苗族自治州  辽宁鞍山  固原  咸阳  大连  辽源  东营  朔州  潍坊  眉山  铜仁  果洛州  绍兴  锦州  宁波  长治  日照  鹰潭  吉林  北海  重庆  商丘  吕梁  通化  陇南  贺州  遵义  无锡  滨州  宜昌  金华  朝阳  荆门  杭州  淄博  玉树州  贵阳  安庆  广安  黄冈  松原  博尔塔拉州  沈阳  三门峡  白城  来宾  长春  广州  临沂  新乡  红河哈尼族彝族自治州  雅安  呼和浩特  本溪  许昌  衡水  十堰  池州  阿坝州  临汾  阜新  海东地区  资阳  贵港  黔西南州  芜湖  桂林  内江  平顶山  西宁  云浮  揭阳  忻州  安康  濮阳  吴忠  德州  台州  长沙  安顺  巴中  西安 | 晋中  德宏州  景德镇  上饶  乌兰察布  梅州  信阳  黔东南苗族侗族自治州  拉萨  连云港  百色  淮北  廊坊  淮南  保定  永州  秦皇岛  凉山州  亳州  岳阳  宿州  邯郸  衡阳  常德  六安  湘西州  张家界  钦州  佛山  黄石  庆阳  珠海  宜宾  淮安  宜春  赤峰  昭通  益阳  湛江  温州  萍乡  临沧  商洛  常州  吉安  怀化  榆林  安阳  宣城  南宁  扬州  包头  黄山  马鞍山  沧州  滁州  徐州  延安  中山  赣州  河源  惠州  玉林  娄底  汕头  白银  东莞  苏州  肇庆  武汉  驻马店  巴彦淖尔  南通  阳江  咸宁  普洱  抚州  鄂尔多斯  太原  鹤岗  晋城  盐城  昆明  郴州  保山  汕尾  铜陵  韶关  株洲  蚌埠  兴安盟  葫芦岛  合肥  阜阳 | 阳泉  茂名  丹东  漯河  哈尔滨  自贡  乌海  石家庄  开封  深圳  鹤壁  石嘴山  鄂州  上海  泰州  成都  泸州  清远  青岛  呼伦贝尔  北京  荆州  湖州  银川  曲靖  洛阳  防城港  南昌  襄阳 | 东莞  秦皇岛  梅州  岳阳  资阳  定西  商丘  吴忠  邵阳  滁州  常州  焦作  信阳  乌兰察布  梧州  凉山州  北京  西安  六安  长沙  辽阳  盘锦  恩施州  濮阳  清远  银川  揭阳  温州  玉林  益阳  渭南  潍坊  保山  贵港  曲靖  固原  金华  黔西南州  忻州  芜湖  德宏州  呼和浩特  临汾  红河哈尼族彝族自治州  驻马店  泰州  广州  长春  黔南布依族苗族自治州  白城  新余  松原  博尔塔拉州  沈阳  淮安  雅安  云浮  桂林  台州  咸阳  本溪  连云港  阿坝州  娄底  海东地区  十堰  巴彦淖尔  杭州  黄山  宝鸡  苏州  泰安  平顶山  衢州  东营  嘉兴  吉林  新乡  果洛州  昭通  贵阳  晋中  绍兴  舟山  扬州  衡阳  普洱  玉树州  遵义  锦州  鄂州  延安  陇南  通化  商洛  天津  哈尔滨  阜新  眉山  永州  铜仁  贺州  乐山  廊坊  宣城  庆阳  兴安盟  亳州  乌海  嘉峪关  德州  大连  鹰潭  铜陵  阳泉  郴州  成都  长治  安康  毕节  滨州  河池  宁波  吕梁  辽源  马鞍山  湛江  安顺  丹东  重庆  宜昌  抚顺  枣庄  铁岭  中山  徐州  日照  汕尾  白山  常德  张家界  许昌  淄博  来宾  拉萨  广安  宜宾  洛阳  鹤岗  湖州  南京  内江  北海  三门峡  池州  朝阳  阳江  巴中  辽宁鞍山  西宁  无锡  六盘水  韶关  黄石  漯河  钦州  河源  沧州  南通  白银  咸宁  晋城  铜川  临沧  太原  衡水  泸州  鹤壁  珠海  安庆  上海  朔州  自贡 | 惠州  百色  保定  南昌  汕头  景德镇  邯郸  湘西州  抚州  怀化  榆林  淮南  鄂尔多斯  萍乡  南宁  昆明  蚌埠  安阳  石家庄  葫芦岛  包头  防城港  合肥  临沂  吉安  宿州  宜春  石嘴山  株洲  荆州  开封  茂名  上饶  赣州  黔东南苗族侗族自治州  赤峰 | 黄冈  盐城  青岛  淮北  襄阳  佛山  肇庆  呼伦贝尔  武汉  荆门  深圳  阜阳 | 信阳  朝阳  临沧  六安  岳阳  白银  恩施州  濮阳  毕节  西宁  绍兴  巴中  阳江  太原  池州  郴州  阜阳  南京  三门峡  宜宾  张家界  许昌  汕尾  博尔塔拉州  西安  内江  桂林  松原  阿坝州  铜陵  资阳  本溪  庆阳  黔南布依族苗族自治州  无锡  安阳  辽阳  昭通  上饶  白山  永州  阜新  日照  天津  辽源  韶关  普洱  衡阳  玉树州  亳州  商洛  陇南  芜湖  景德镇  衢州  临汾  宝鸡  益阳  百色  十堰  常德  安顺  马鞍山  广安  长春  汕头  眉山  驻马店  安康  宣城  德宏州  通化  安庆  忻州  临沂  黔西南州  中山  吉安  吴忠  泰安  佛山  果洛州  滁州  鹰潭  湘西州  南宁  雅安  遵义  河源  北海  潍坊  新余  白城  咸阳  渭南  东莞  珠海  来宾  黄冈  抚顺  红河哈尼族彝族自治州  温州  六盘水  荆门  嘉峪关  玉林  台州  杭州  商丘  长治  新乡  延安  拉萨  邵阳  钦州  淮南  铁岭  宜春  盘锦  铜仁  宜昌  合肥  榆林  固原  贵阳  东营  贺州  黄山  铜川  咸宁  贵港  黔东南苗族侗族自治州  河池  德州  梧州  娄底  揭阳  保山  抚州  赣州  舟山  昆明  重庆  平顶山  吉林  辽宁鞍山  海东地区  凉山州  萍乡  兴安盟  蚌埠  鹤岗  沈阳  枣庄  焦作  黄石  晋中  乐山  株洲  朔州  云浮  梅州  肇庆  嘉兴  惠州  广州  锦州  宁波  定西  长沙  淄博  怀化  大连 | 鄂尔多斯  淮北  徐州  保定  沧州  扬州  巴彦淖尔  淮安  乌兰察布  呼和浩特  湛江  南通  吕梁  苏州  包头  葫芦岛  常州  盐城  廊坊  宿州  邯郸  武汉  滨州  秦皇岛  衡水  晋城  赤峰  连云港 | 荆州  青岛  哈尔滨  湖州  防城港  漯河  阳泉  泰州  茂名  鄂州  金华  石嘴山  开封  清远  泸州  成都  丹东  上海  深圳  南昌  洛阳  乌海  北京  银川  自贡  石家庄  呼伦贝尔  鹤壁  襄阳  曲靖 |

**Appendix 8:**

We relaxed the assumption that GDP growth and economic development have linear relationships with outcomes. We ran models coding these variables as categories and presented the results in Appendix Figure 8.1-8.3. We found evidence that higher levels of GDP growth are associated with a higher likelihood of adopting integrative labor market policies, and lower GDP growth is associated with lower likelihood of adopting integrative labor market policies.

**Appendix Figure 8.1 Marginal Effects of Adopting Overall Policies**



**Appendix Figure 8.2 Marginal Effects of Adopting Selection Policies**



**Appendix Figure 8.3 Marginal Effects of Adopting Integration Policies**



Note: Reference group: Middle 50%. X-axis: Predicted probabilities.

**Appendix 9.**

**Appendix Table 9. Summaries of findings**

|  |  |
| --- | --- |
| **Hypotheses** | **Findings** |
| (H1.1) Cities intending to maintain economic growth are more likely to adopt lenient requirements in selecting migrants to receive local hukouto fulfill the local demand for labors. | Supported |
| (H1.2) Cities with higher levels of economic development are more likely to adopt stricter requirements in selecting eligible migrants to acquire local hukou and are more reluctant to provide welfare and services available for locals to migrants. | Partially Supported (Selection policy) |
| (H1.3) Cities with high levels of economics hardship (e.g., high unemployment) are more likely to adopt stringent migration policies while cities not in economic distress are more likely to enact pro-migration policies. | Supported |
| (H1.4) A high demand for low-skilled workers is related to lenient selection policies and stringent integration policies. | Unsupported |
| (H2.1) City governments facing superior governments with stronger top-down control forces are more like to adopt policies consistent with the central government’s policy direction. | Supported |
| (H2.2) City communist party secretaries (CPSs), the main leader of municipal affairs under CCP, in earlier or later years of their first term would adopt more policy reform measures than those in midst of their first term or in their second term. | Supported |
| (H2.3) CPSs who work in their home regions will adopt more generous integration measures if their favoritism extends beyond local residents to migrant populations. | Supported |
| (H2.4) CPSs having a longer history in CCP and having educational and work experiences in public administration are more likely to select policies consistent with central government’s policy direction. | Partially supported |
| (H3) Public’s higher receptivity toward migrants and fewer migrant-related conflicts are associated with more lenient selection and integration policies. | Partially supported (Conflicts) |

Note: The supported hypotheses are in parenthesis.

**Appendix 10:**

We conducted several sensitivity analyses to account for additional factors and to test the robustness of our findings on the determinants of hukou reform policies. The results are presented in Appendix Tables 10.1–10.3. First, we controlled for pre-existing labor market environments in which migrant workers are embedded through two indicators: the proportion of working migrants covered by employer-provided social insurance and the share of employed migrants with a job contract. Second, we included the number of *Dibao* program recipients in the city in 2013 as an alternative measure for economic hardship to replace unemployment rates. Third, in the model predicting selection policy approaches, we controlled for integration policy approaches; and in the model predicting integration policy approaches, we controlled for selection policy approaches. Overall, our main findings were not sensitive to the above specifications.

References:

Grossback, L. J., Nicholson-Crotty, S., & Peterson, D. A. (2004). Ideology and learning in policy diffusion. *American Politics Research, 32*(5), 521-545.

Shi, X., & Xi, T. (2018). Race to safety: Political competition, neighborhood effects, and coal mine deaths in China. *Journal of Development Economics, 131*, 79-95.

Yu, J., Zhou, L. A., & Zhu, G. (2016). Strategic interaction in political competition: Evidence from spatial effects across Chinese cities. *Regional Science and Urban Economics, 57*, 23-37.

**Appendix Table 10.1 Sensitivity Analyses – Multinomial Regression Results on Determinants of Overall Hukou Reform Policies**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Ref: Selective** |  |  |  |
|  | **Welcoming** |  | **Non-integrative** |  |
|  | Preexisting integration | Alternative economic hardship | Preexisting integration | Alternative economic hardship |
| Model | (1) | (2) | (1) | (2) |
| Economic Factors |  |  |  |  |
| GDP growth | -0.163 | -0.171 | 0.229 | 0.198 |
|  | (0.098) | (0.100) | (0.211) | (0.190) |
| Economic development | 0.012 | 0.018 | -0.027 | -0.014 |
| (nightlight density) | (0.036) | (0.037) | (0.058) | (0.096) |
| Proportion of non-skilled | 8.113 | 8.601 | 4.781 | 4.803 |
| workforce | (5.819) | (5.357) | (7.573) | (5.229) |
| Unemployment rate | -0.570 |  | 1.942 |  |
|  | (0.498) |  | (1.174) |  |
| Political Factors |  |  |  |  |
| Division of duties | 2.736\*\*\* | 2.107\*\* | -1.138 | -0.865 |
|  | (0.732) | (0.643) | (1.145) | (1.119) |
| Timetable | 1.217 | 0.906 | -2.086\* | -1.159 |
|  | (0.755) | (0.734) | (1.037) | (0.968) |
| Tenure of municipal CPS (21–40 months) |  |  |  |  |
| 0–20 months | 0.974 | 0.959\* | 0.004 | 0.486 |
|  | (0.526) | (0.471) | (0.838) | (0.983) |
| 41–60 months | -0.212 | -0.028 | 1.336 | 1.066 |
|  | (0.573) | (0.535) | (0.762) | (1.044) |
| 61+ months | 0.869 | 0.894 | -15.749\*\*\* | -14.514\*\*\* |
|  | (1.343) | (1.008) | (2.026) | (2.771) |
| Home province leader | 0.997 | 1.097\* | -0.156 | -0.083 |
|  | (0.528) | (0.440) | (0.905) | (0.945) |
| Years as CCP member | 0.174\* | 0.150 | 0.204 | 0.253 |
|  | (0.080) | (0.079) | (0.198) | (0.166) |
| Degree in social sciences | 1.579\*\* | 1.430\*\* | 0.597 | 0.875 |
|  | (0.496) | (0.518) | (0.517) | (0.646) |
| Secretary in government | 0.533 | 0.606 | 0.637 | 0.167 |
|  | (0.547) | (0.495) | (0.976) | (0.800) |
| Sociocultural Factors |  |  |  |  |
| Intensity of labor disputes | -0.958 | -1.298 | 11.359\* | 12.716\*\* |
|  | (5.019) | (4.873) | (4.691) | (4.483) |
| Level of integration | -0.800 | -1.366 | -1.595 | -1.835 |
|  | (0.757) | (0.797) | (1.439) | (1.320) |
| Control Variables |  |  |  |  |
| Population (in 10,000) | -0.006 | -0.004 | 0.011\* | 0.012 |
|  | (0.006) | (0.004) | (0.005) | (0.008) |
| % migrants covered by employer- | -1.311 |  | -0.914 |  |
| provided social insurance | (2.166) |  | (3.423) |  |
| % migrant workers with | 0.333 |  | -3.759 |  |
| job contract | (1.836) |  | (1.970) |  |
| Dibao recipients (in 10,000) |  | 0.008 |  | -0.017 |
|  |  | (0.086) |  | (0.138) |
| Constant | -4.709 | -7.291 | 14.395 | 7.781 |
|  | (5.583) | (5.369) | (13.718) | (9.234) |
| N | 175 | 182 | 175 | 182 |

Notes: Each two columns are based on a multinomial regression model. Coefficients are presented, and standard errors clustered by province are in brackets. Each model controls for population, % of migrants, ethnic minorities, and elderly, the number of college degree holders, region, proportion of welfare expenditure, reliance on land conveyance income, and CPS’ gender, education, age, and hukou reform policies from neighboring regions. Coefficients are presented, and standard errors clustered by province are in brackets.

*\* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001*.

**Appendix Table 10.2 Sensitivity Analyses – Multinomial Regression Results on Determinants of Hukou Reform Selection Policies**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Ref: Selective** | | | | | |
|  | **Welcomes Non-high-skilled** | | | **Welcomes High-skilled** | | |
|  | Preexisting integration | Integration clusters | Alternative economic hardship | Preexisting integration | Integration clusters | Alternative economic hardship |
| Model | (1) | (2) | (3) | (1) | (2) | (3) |
| Economic Factors |  |  |  |  |  |  |
| GDP growth | -0.005 | 0.081 | 0.037 | 0.907\* | 0.840\* | 1.158 |
|  | (0.175) | (0.191) | (0.183) | (0.373) | (0.418) | (0.640) |
| Economic development | -0.116\*\* | -0.100\* | -0.097\* | 0.112\* | 0.066\* | 0.127 |
| (nightlight density) | (0.040) | (0.047) | (0.040) | (0.053) | (0.032) | (0.104) |
| Proportion of non-skilled | 1.409 | 2.659 | 1.908 | -3.463 | -9.125 | -7.896 |
| workforce | (5.585) | (5.437) | (4.812) | (14.105) | (11.665) | (12.235) |
| Unemployment rate | -0.277 | -0.417 |  | 0.066 | -0.482 |  |
|  | (0.637) | (0.762) |  | (2.181) | (1.999) |  |
| Political Factors |  |  |  |  |  |  |
| Division of duties | 2.582\*\*\* | 2.004\* | 1.533\* | -3.331 | -2.048 | -4.112 |
|  | (0.559) | (0.869) | (0.674) | (2.640) | (4.226) | (3.404) |
| Timetable | -0.102 | -0.157 | -0.227 | -0.555 | -0.751 | -0.858 |
|  | (1.093) | (1.143) | (1.049) | (3.215) | (3.370) | (2.795) |
| Tenure of municipal CPS (21–40 months) |  |  |  |  |  |  |
| 0–20 months | -0.726 | -0.344 | -0.263 | -0.161 | 0.343 | -0.506 |
|  | (0.925) | (0.703) | (0.684) | (0.850) | (0.668) | (0.573) |
| 41–60 months | 0.773 | 0.550 | 0.580 | -1.143 | -0.749 | -2.406 |
|  | (0.734) | (0.971) | (0.760) | (2.767) | (2.426) | (2.825) |
| 61+ months | 2.353 | 2.077 | 1.519 | -1.468 | 0.078 | -1.643 |
|  | (1.979) | (1.667) | (1.688) | (2.821) | (2.549) | (2.612) |
| Home province leader | 0.868 | 0.755 | 0.481 | 0.889 | 1.291 | 2.770\*\* |
|  | (1.013) | (0.960) | (0.875) | (1.038) | (1.043) | (1.013) |
| Years as CCP member | 0.120 | 0.128 | 0.128 | 0.227 | 0.349 | 0.202 |
|  | (0.153) | (0.153) | (0.139) | (0.205) | (0.199) | (0.123) |
| Degree in social sciences | -0.037 | 0.427 | 0.377 | 2.775 | 1.935 | 2.268 |
|  | (0.803) | (0.825) | (0.835) | (2.315) | (1.927) | (2.829) |
| Secretary in government | 0.889 | 0.426 | 0.438 | 0.767 | 1.507 | 0.521 |
|  | (0.752) | (0.764) | (0.709) | (0.841) | (0.933) | (1.025) |
| Sociocultural Factors |  |  |  |  |  |  |
| Intensity of labor disputes | 0.245 | -1.633 | 1.596 | 1.284 | -8.477 | -1.174 |
|  | (4.107) | (4.354) | (3.777) | (7.491) | (7.577) | (5.303) |
| Level of integration | 1.280 | 1.045 | 0.654 | -0.210 | 0.592 | 0.724 |
|  | (1.167) | (1.225) | (1.046) | (1.169) | (1.005) | (1.307) |
| Control Variables |  |  |  |  |  |  |
| Population (in 10,000) | 0.010 | 0.008 | 0.008 | 0.002 | 0.003 | 0.004 |
|  | (0.006) | (0.006) | (0.005) | (0.003) | (0.003) | (0.002) |
| % migrants covered by employer- | -0.637 |  |  | 7.813 |  |  |
| provided social insurance | (4.114) |  |  | (4.164) |  |  |
| % migrant workers with | -2.119 |  |  | -0.227 |  |  |
| job contract | (1.440) |  |  | (2.271) |  |  |
| Dibao recipients (in 10,000) |  |  | -0.045 |  |  | 0.603\*\*\* |
|  |  |  | (0.074) |  |  | (0.158) |
| Integration policies (ref: Integrative social welfare policies) |  |  |  |  |  |  |
| Integrative labor market policies |  | 0.932 |  |  | 1.893\* |  |
|  |  | (1.289) |  |  | (0.891) |  |
| Non-integrative policies |  | 2.002\*\*\* |  |  | 3.379\* |  |
|  |  | (0.554) |  |  | (1.324) |  |
| Constant | 2.976 | -2.419 | -0.629 | -8.960 | -9.426 | -8.957 |
|  | (10.428) | (10.293) | (8.857) | (10.224) | (12.933) | (10.707) |
| N | 175 | 181 | 182 | 175 | 181 | 182 |

Notes: Each two columns are based on a multinomial regression model. Coefficients are presented, and standard errors clustered by province are in brackets. Each model controls for population, % of migrants, ethnic minorities, and elderly, the number of college degree holders, region, proportion of welfare expenditure, reliance on land conveyance income, and CPS’ gender, education, age, and hukou reform policies from neighboring regions. Coefficients are presented, and standard errors clustered by province are in brackets.

*\* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001*.

**Appendix Table 10.3 Sensitivity Analyses – Multinomial Regression Results on Determinants of Hukou Reform Integration Policies**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Ref: Integrative Social Welfare** | | | | | |
| **Integrative Labor Market** | | | **Non-integrative** | | |
| Preexisting integration | Selection clusters | Alternative economic hardship | Preexisting integration | Selection clusters | Alternative economic hardship |
| Model | (1) | (2) | (3) | (1) | (2) | (3) |
| Economic Factors |  |  |  |  |  |  |
| GDP growth | -0.243 | -0.284 | -0.202 | 0.234 | 0.178 | 0.197 |
|  | (0.145) | (0.181) | (0.212) | (0.153) | (0.157) | (0.188) |
| Economic development | 0.028 | -0.013 | 0.003 | -0.044 | 0.006 | -0.012 |
| (nightlight density) | (0.073) | (0.060) | (0.066) | (0.059) | (0.069) | (0.061) |
| Proportion of non-skilled | 10.401 | 11.506 | 8.844 | 10.463 | 7.428 | 4.705 |
| workforce | (8.250) | (8.555) | (6.045) | (10.520) | (9.463) | (5.413) |
| Unemployment rate | -0.294 | -1.390 |  | 3.171 | 2.754\* |  |
|  | (0.906) | (1.066) |  | (1.747) | (1.192) |  |
| Political Factors |  |  |  |  |  |  |
| Division of duties | -1.120 | -1.299 | -1.275 | -3.239\* | -3.949\*\*\* | -2.080 |
|  | (1.383) | (1.198) | (1.046) | (1.373) | (1.123) | (1.262) |
| Timetable | 2.948\* | 3.018\* | 2.448 | -2.571\* | -3.002\* | -1.333 |
|  | (1.484) | (1.291) | (1.262) | (1.189) | (1.279) | (1.020) |
| Tenure of municipal CPS (21–40 months) |  |  |  |  |  |  |
| 0–20 months | 1.610\* | 1.074 | 0.710 | 0.189 | 0.567 | 0.259 |
|  | (0.779) | (1.245) | (0.891) | (0.783) | (0.855) | (1.012) |
| 41–60 months | 0.574 | 0.118 | 0.024 | 1.976\*\* | 1.843\* | 1.159 |
|  | (1.213) | (0.946) | (0.847) | (0.763) | (0.767) | (0.777) |
| 61+ months | -0.450 | 0.722 | 0.509 | -18.287\*\*\* | -20.357\*\*\* | -16.648\*\*\* |
|  | (1.584) | (1.375) | (1.439) | (2.117) | (2.712) | (1.922) |
| Home province leader | -0.983 | -0.574 | -0.290 | -1.781 | -1.414 | -1.023 |
|  | (1.123) | (0.821) | (1.151) | (0.996) | (1.013) | (0.555) |
| Years as CCP member | 0.030 | -0.161 | -0.029 | -0.026 | -0.014 | 0.042 |
|  | (0.116) | (0.114) | (0.141) | (0.143) | (0.138) | (0.127) |
| Degree in social sciences | 1.991 | 0.956 | 1.005 | 0.331 | -0.241 | 0.232 |
|  | (1.233) | (0.745) | (0.677) | (0.545) | (0.659) | (0.587) |
| Secretary in government | 0.017 | 0.180 | 0.543 | 0.218 | -0.809 | -0.058 |
|  | (1.225) | (0.750) | (0.962) | (1.041) | (1.097) | (0.885) |
| Sociocultural Factors |  |  |  |  |  |  |
| Intensity of labor disputes | 20.950\* | 19.342\* | 12.201 | 16.229\*\* | 14.401\*\* | 15.392\*\* |
|  | (8.260) | (9.642) | (6.749) | (5.304) | (4.396) | (5.549) |
| Level of integration | 1.232\* | 0.459 | 0.642 | -1.539 | -1.559 | -1.740 |
|  | (0.618) | (0.702) | (0.772) | (1.689) | (1.390) | (1.552) |
| Control Variables |  |  |  |  |  |  |
| Population (in 10,000) | -0.004 | -0.005 | -0.005 | 0.010\*\* | 0.007 | 0.008 |
|  | (0.007) | (0.008) | (0.005) | (0.003) | (0.005) | (0.007) |
| % migrants covered by employer- | 1.332 |  |  | 1.711 |  |  |
| provided social insurance | (3.193) |  |  | (3.806) |  |  |
| % migrant workers with | 5.712 |  |  | -2.822 |  |  |
| job contract | (3.842) |  |  | (2.337) |  |  |
| Dibao recipients (in 10,000) |  |  | -0.175 |  |  | -0.007 |
|  |  |  | (0.121) |  |  | (0.126) |
| Selection policies (ref: Selective policies) |  |  |  |  |  |  |
| Welcomes non-high-skilled |  | 2.362\* |  |  | 3.048\*\*\* |  |
|  |  | (0.959) |  |  | (0.733) |  |
| Welcomes high-skilled |  | 3.743\* |  |  | 3.656\*\* |  |
|  |  | (1.516) |  |  | (1.185) |  |
| Constant | -16.621 | -5.953 | -7.724 | 3.052 | 0.109 | 2.516 |
|  | (8.742) | (10.205) | (9.701) | (7.142) | (7.545) | (7.922) |
| N | 175 | 181 | 182 | 175 | 181 | 182 |

Notes: Each two columns are based on a multinomial regression model. Coefficients are presented, and standard errors clustered by province are in brackets. Each model controls for population, % of migrants, ethnic minorities, and elderly, the number of college degree holders, region, proportion of welfare expenditure, reliance on land conveyance income, and CPS’ gender, education, age, and hukou reform policies from neighboring regions. Coefficients are presented, and standard errors clustered by province are in brackets.

*\* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001*.

1. We included characteristics that have data available for most cities. [↑](#footnote-ref-1)
2. All the indicators falling in this scope focus exclusively on the policy area of selection. [↑](#footnote-ref-2)
3. All the indicators falling in this scope focus exclusively on the policy area of redefinition. [↑](#footnote-ref-3)
4. All the indicators falling in this scope focus exclusively on the policy area of integration. [↑](#footnote-ref-4)
5. Depending on specific prefectural-level cities, it normally ranges from 2 to 5 years. [↑](#footnote-ref-5)
6. Although collecting data at the city-level would have been ideal, it is not practical because many cities do not have a unique newspaper. [↑](#footnote-ref-6)
7. 977, 909, 559, 419, and 350 news articles were retrieved in the 5 years from 2010 to 2014, respectively. [↑](#footnote-ref-7)
8. GitHub repo: https://github.com/fxsjy/jieba [↑](#footnote-ref-8)
9. The L2 regularization with C = 0.001 was automatically chosen by grid search as the optimal parameter. [↑](#footnote-ref-9)
10. The *roc\_auc* score is a comprehensive measurement of a model’s classification ability, quantifying the area under the curve (*auc*) plotted with the true positive rate (true positive/[true positive + false negative]) as the y-axis against the false positive rate (false positive/[true negative + false positive]) as the x-axis (Fawcett, 2006). A larger *roc\_auc* value indicates a higher true positive rate and a lower false positive rate, thus a higher degree of accuracy. [↑](#footnote-ref-10)