# Problem or Opportunity? Immigration, Job Search, Entrepreneurship and Labor Market Outcomes of Natives in Germany.

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# Introduction

- Revisit effects of immigration in host economy (Germany).
- Literature evaluates diverse aspects of immigration in receiving countries.
- Focus on wage and employment opportunities of natives.
- Workers are job seekers (main mechanism in literature).
- Germany: 10-11% natives (immigrants) are entrepreneurs.
- Competition with workers vs. competition with entrepreneurs.
- Policy: Assist workers find jobs, facilitate business creation.

# Research questions

- (Same old question!) What are the labour market consequences of immigration (low-skilled shock)?

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- (New angle!) What are the general equilibrium and welfare effects of immigrant entrepreneurship?

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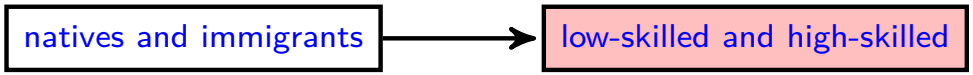
4. Evaluate the welfare effects of immigrants' entrepreneurship.

# Economy

natives and immigrants

# Economy



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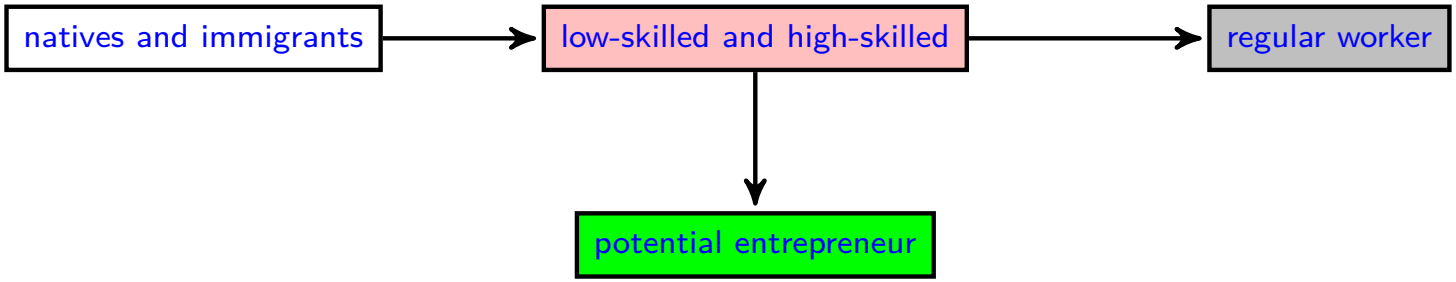
natives and immigrants
low-skilled and high-skilled
regular worker
potential entrepreneur

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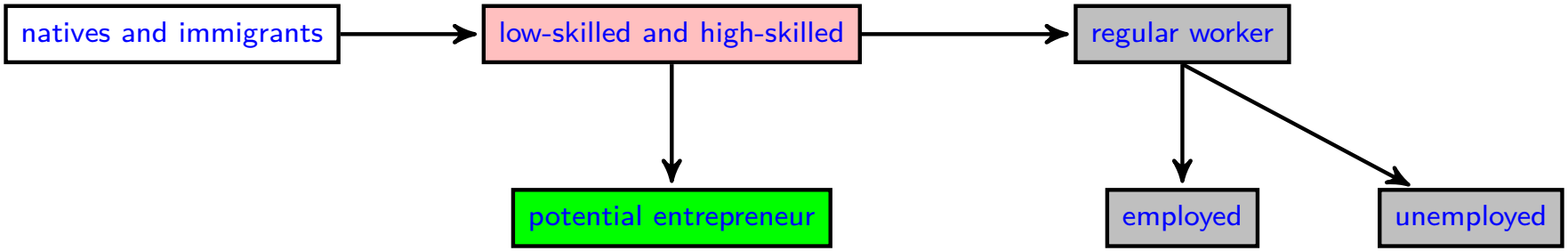
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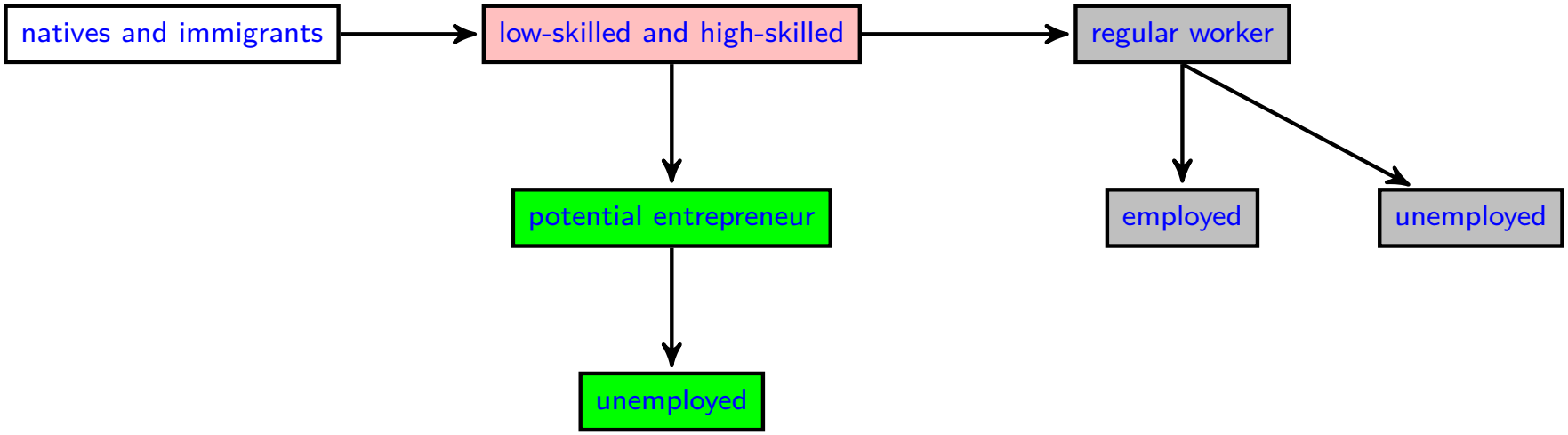
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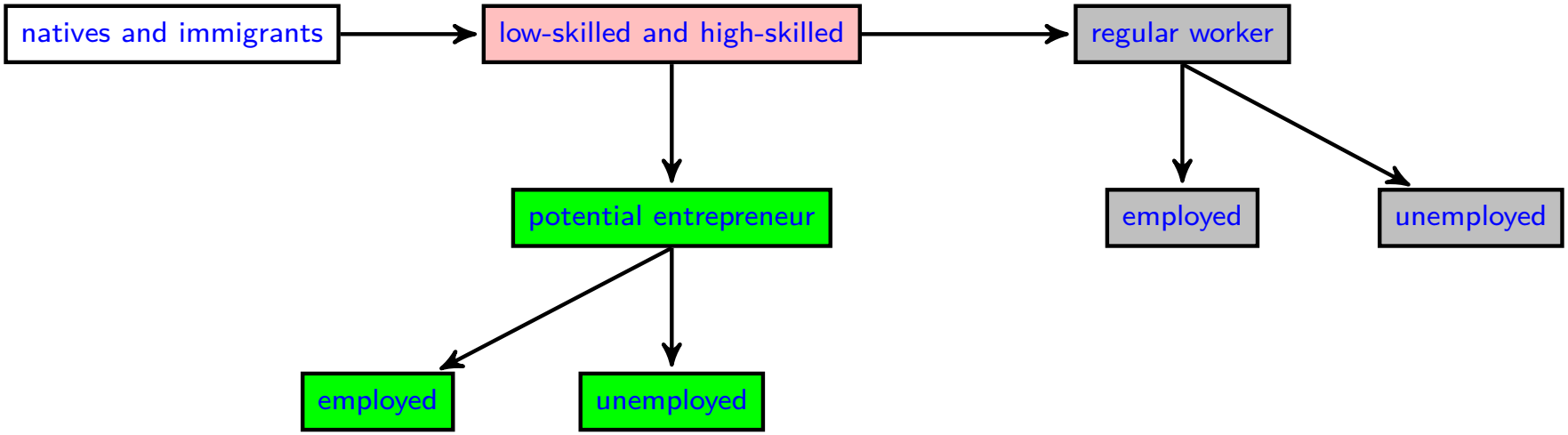
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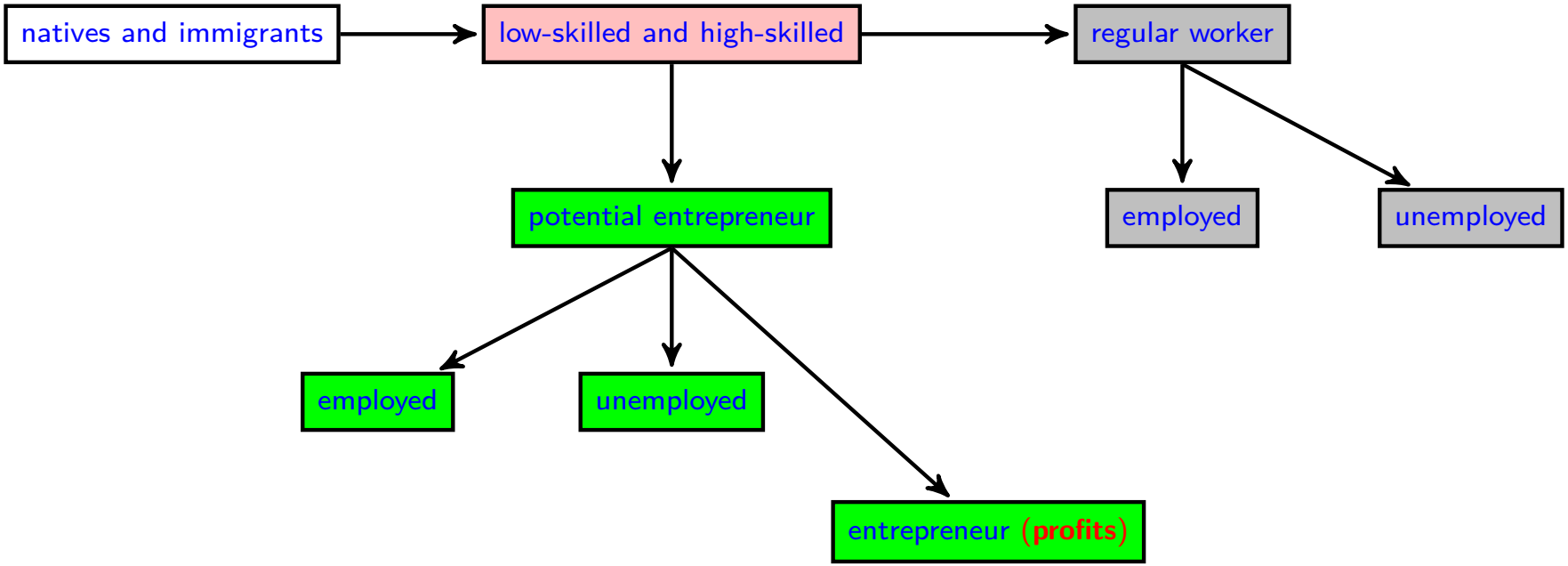
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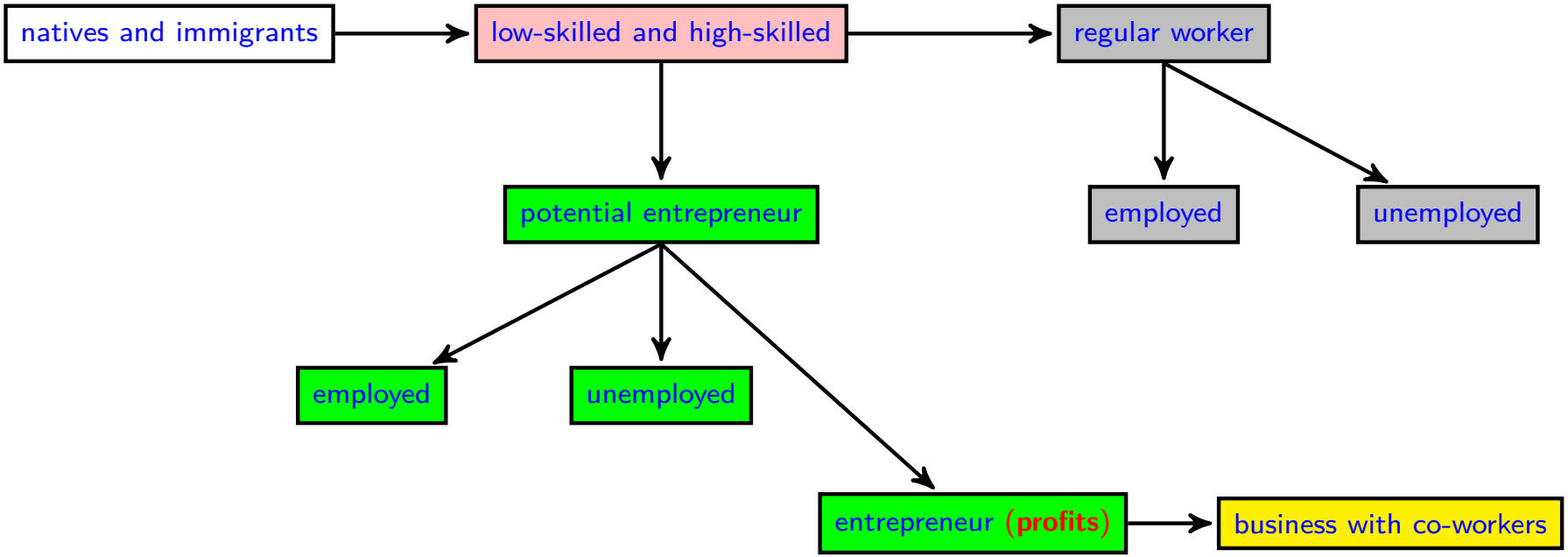
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business with co-workers

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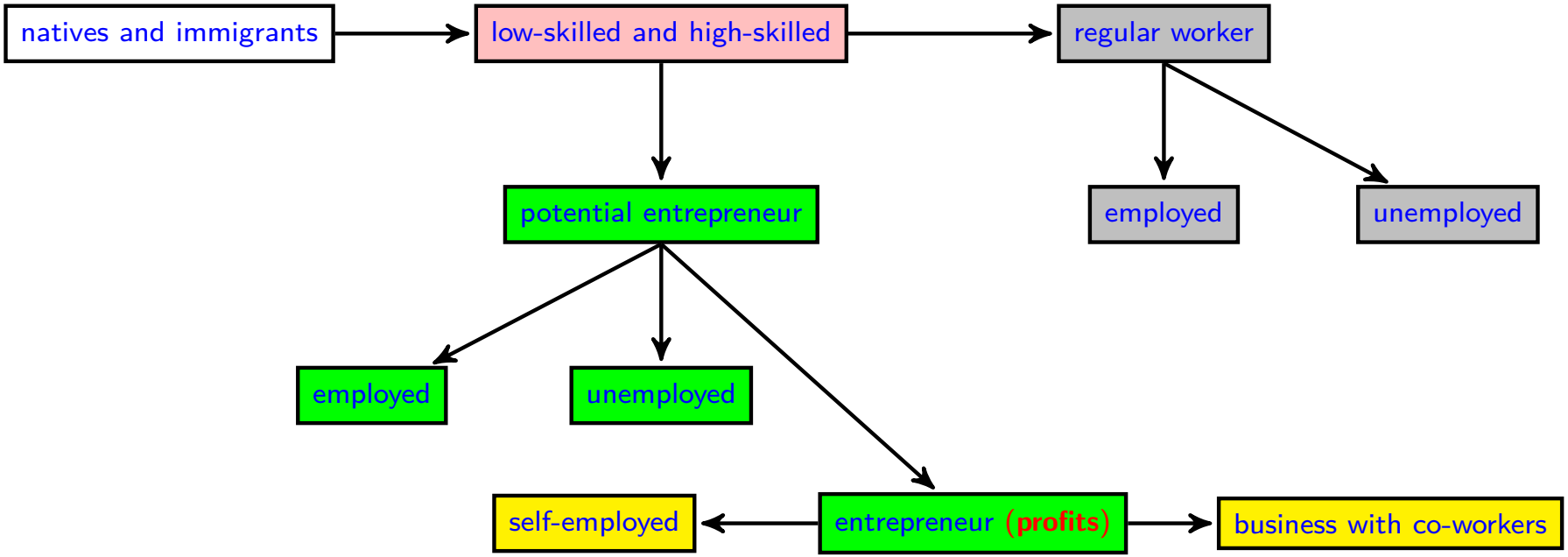
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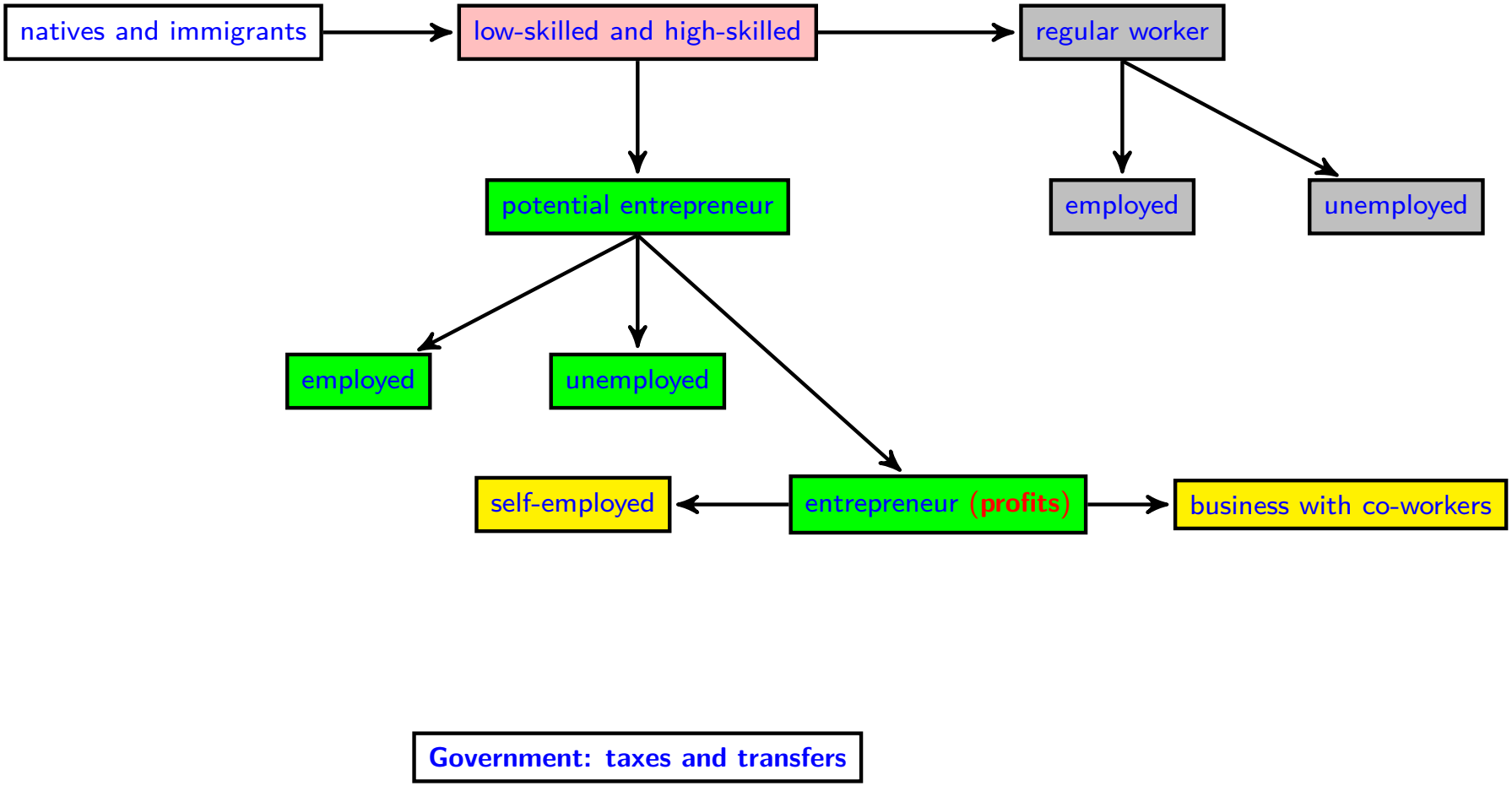
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low-skilled and high-skilled
regular worker
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unemployed
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entrepreneur (profits)
business with co-workers
Government: taxes and transfers

# Calibration

- Native: born in Germany or has German nationality since birth.
- Low-skilled worker: less than 13 years of schooling.
- Potential entrepreneur: observed at least once in data as self-employed, freelance professional, or as small business owner.
- Model parametrized using GSOEP (2000-2017) and macro data.

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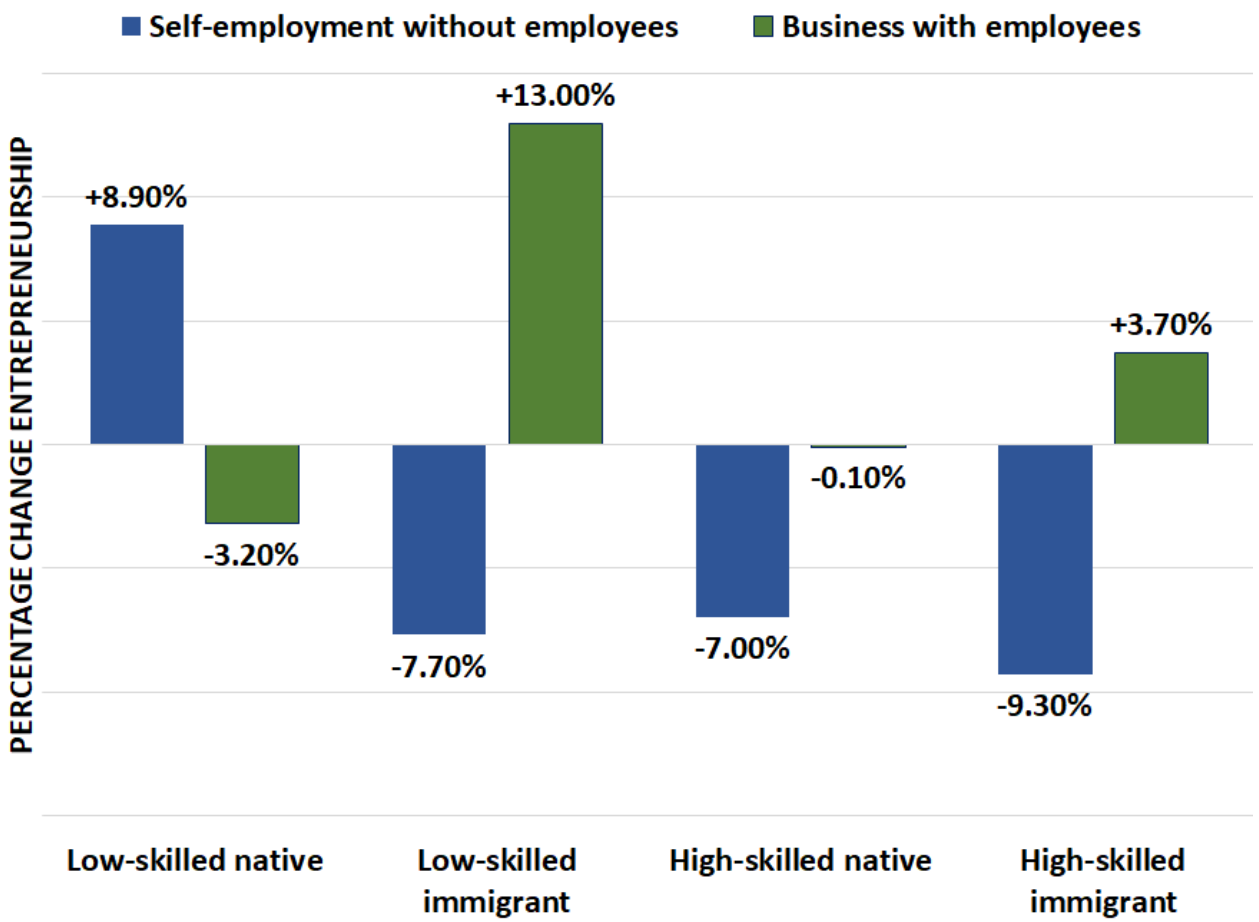
- Potential entrepreneur: observed at least once in data as self-employed, freelance professional, or as small business owner.
- Model parametrized using GSOEP (2000-2017) and macro data.
- Key differences between workers
  1. Higher cost of entry into entrepreneurship for immigrants.
  2. Imperfect substitution between skill groups.
  3. Perfect substitution between ethnic groups within skill group.
  4. Natives more productive.

parameters data model

# Low-skilled immigration

- Germany received approximately three million immigrants between 2012 to 2017.
- Predominantly refugee influx, low-skill biased.
- 20% rise in immigration.
- 24% increase in the low-skilled immigrants' stock.
- 3.3% increase in total population.
- Share of the low-skill population from 64.6% to 65.9%.

# Results: Long-run effect of a 20% increase in immigration on distribution of workers in entrepreneurship



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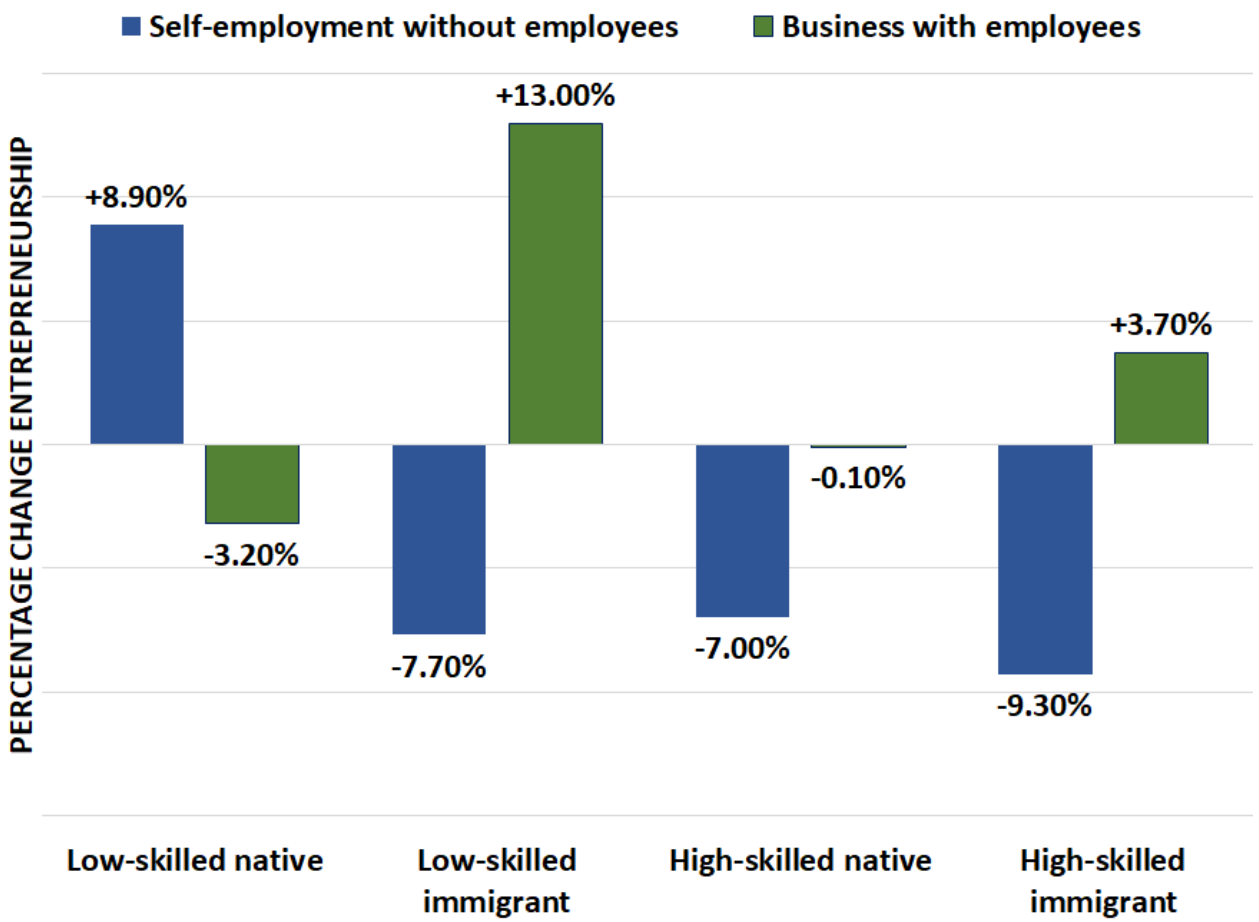


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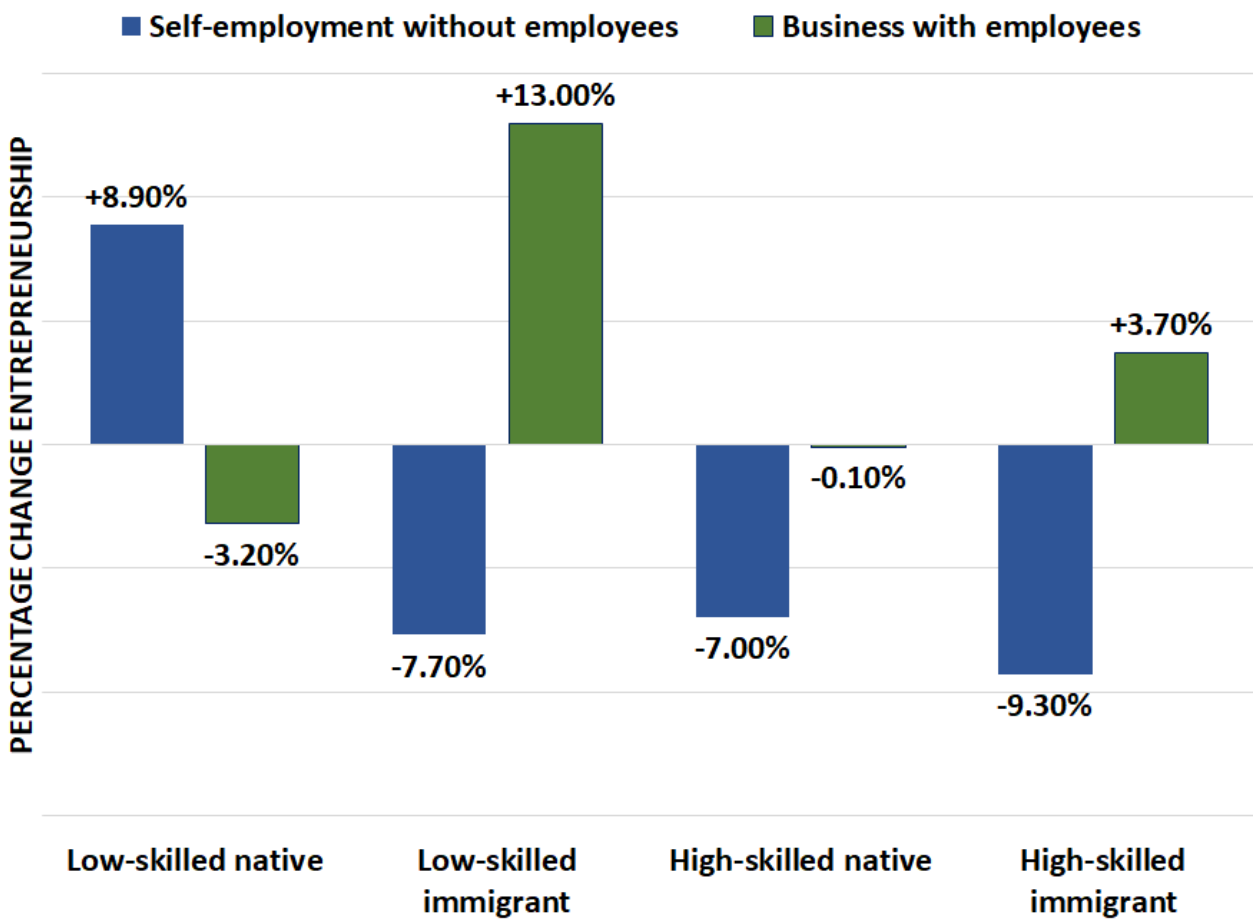


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  1. $-$ $(+)$ **effect on MP of low-skilled (high-skilled).**

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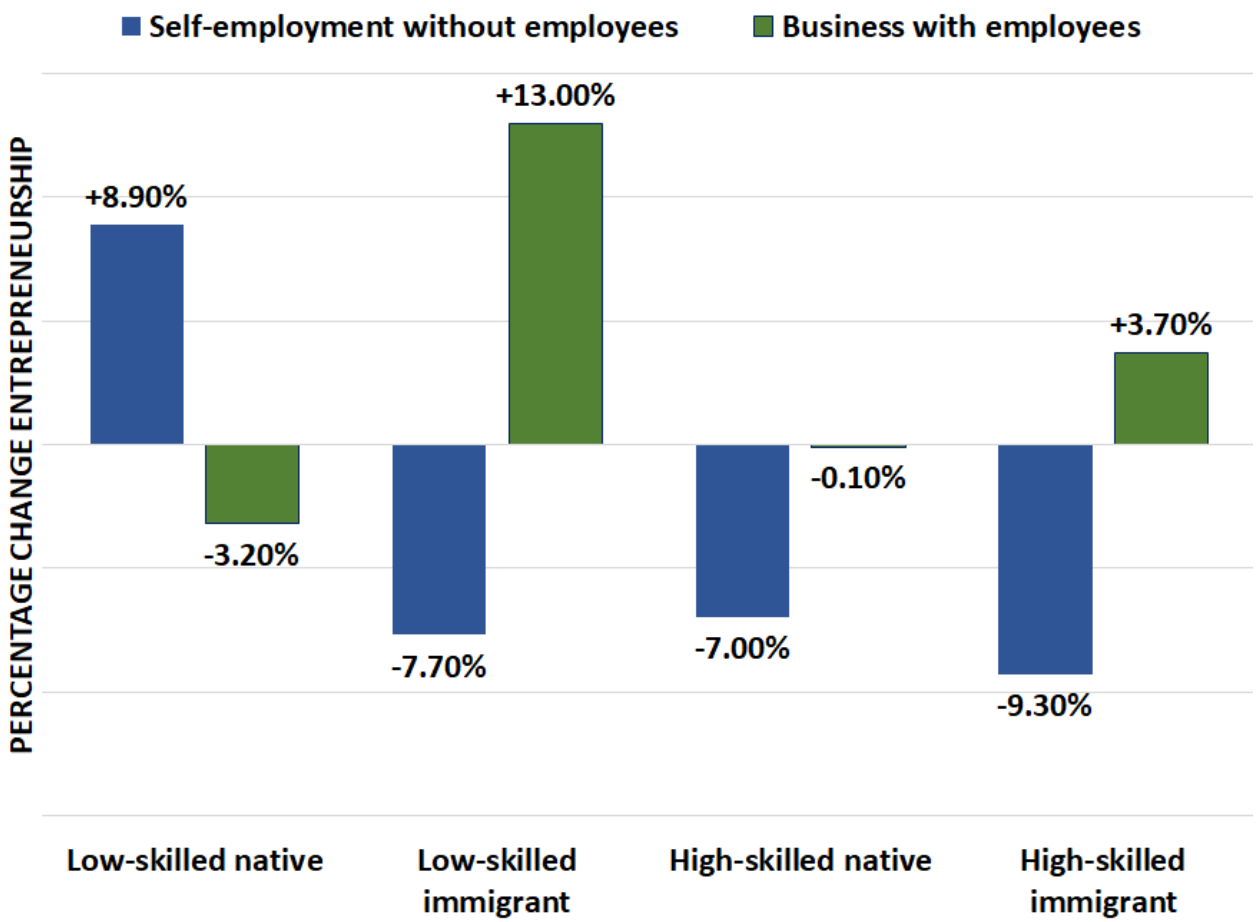
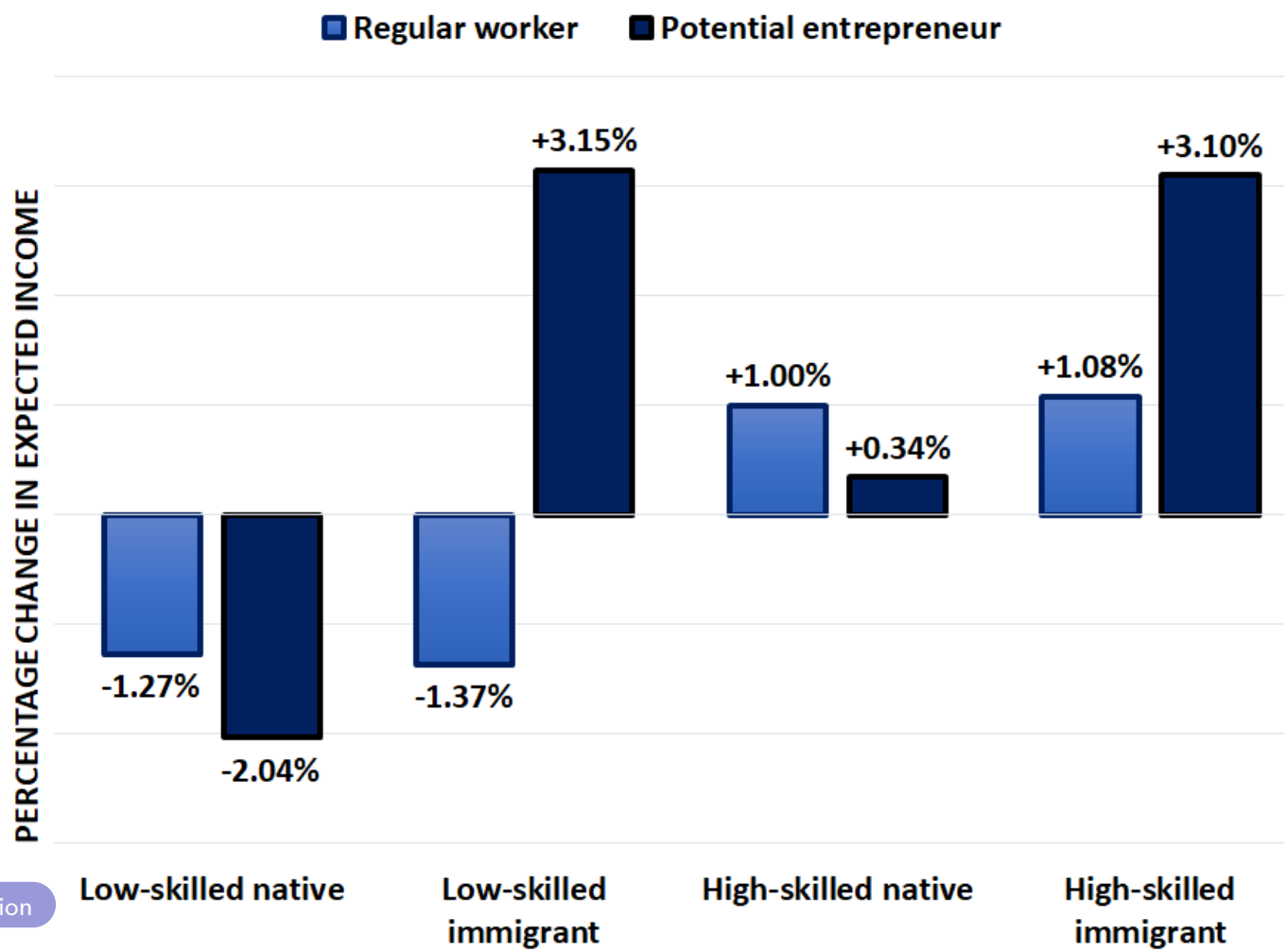


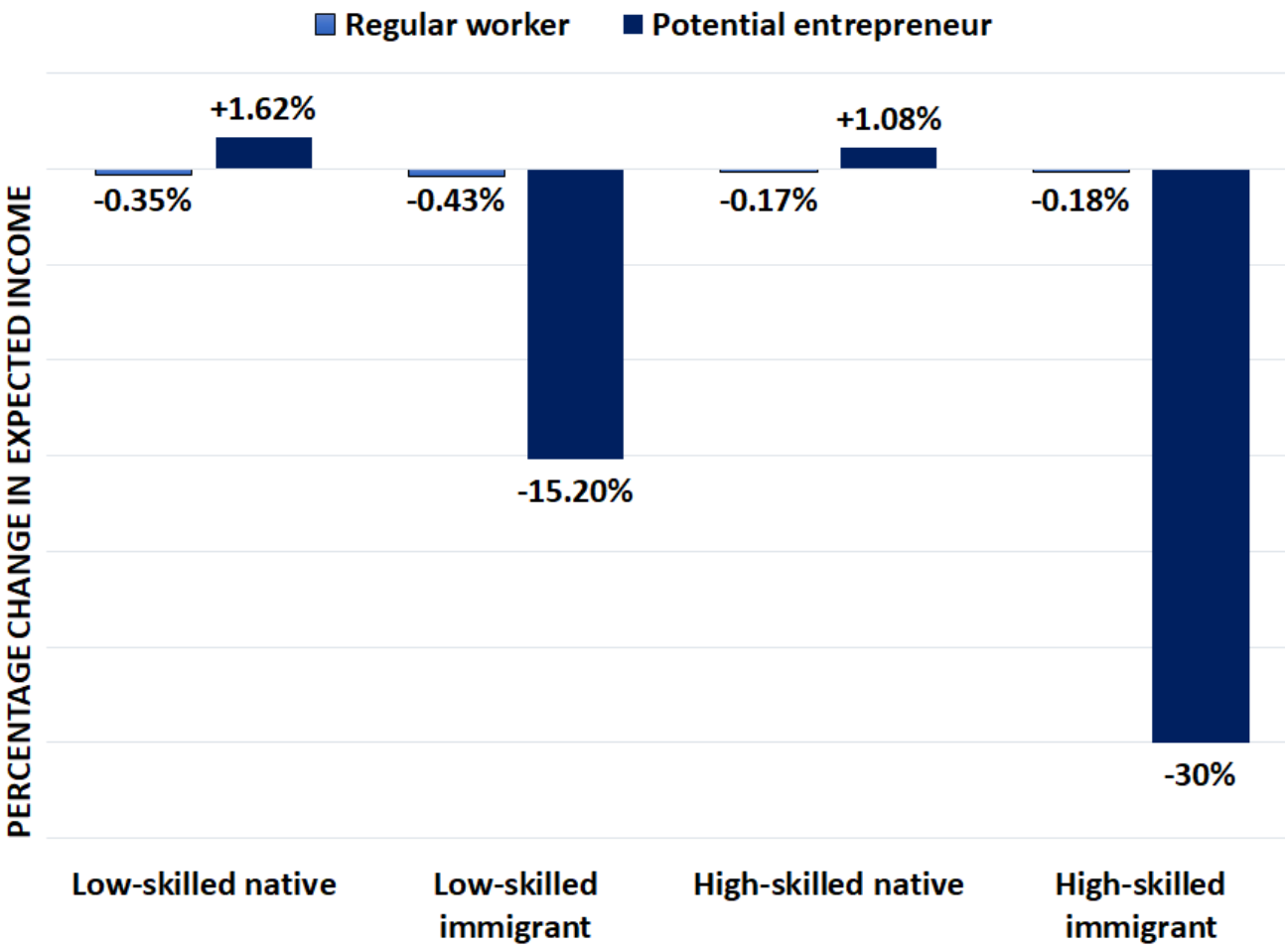

- **Two main effects**
  1. $-$ $(+)$ **effect on MP of low-skilled (high-skilled).**
  2. **Hiring low-skilled worker easy.**

# Results: Welfare effects of a 20% increase in immigration to Germany on representative workers




decomposition

# Results: Counterfactual immigrant entrepreneurship ban




economy

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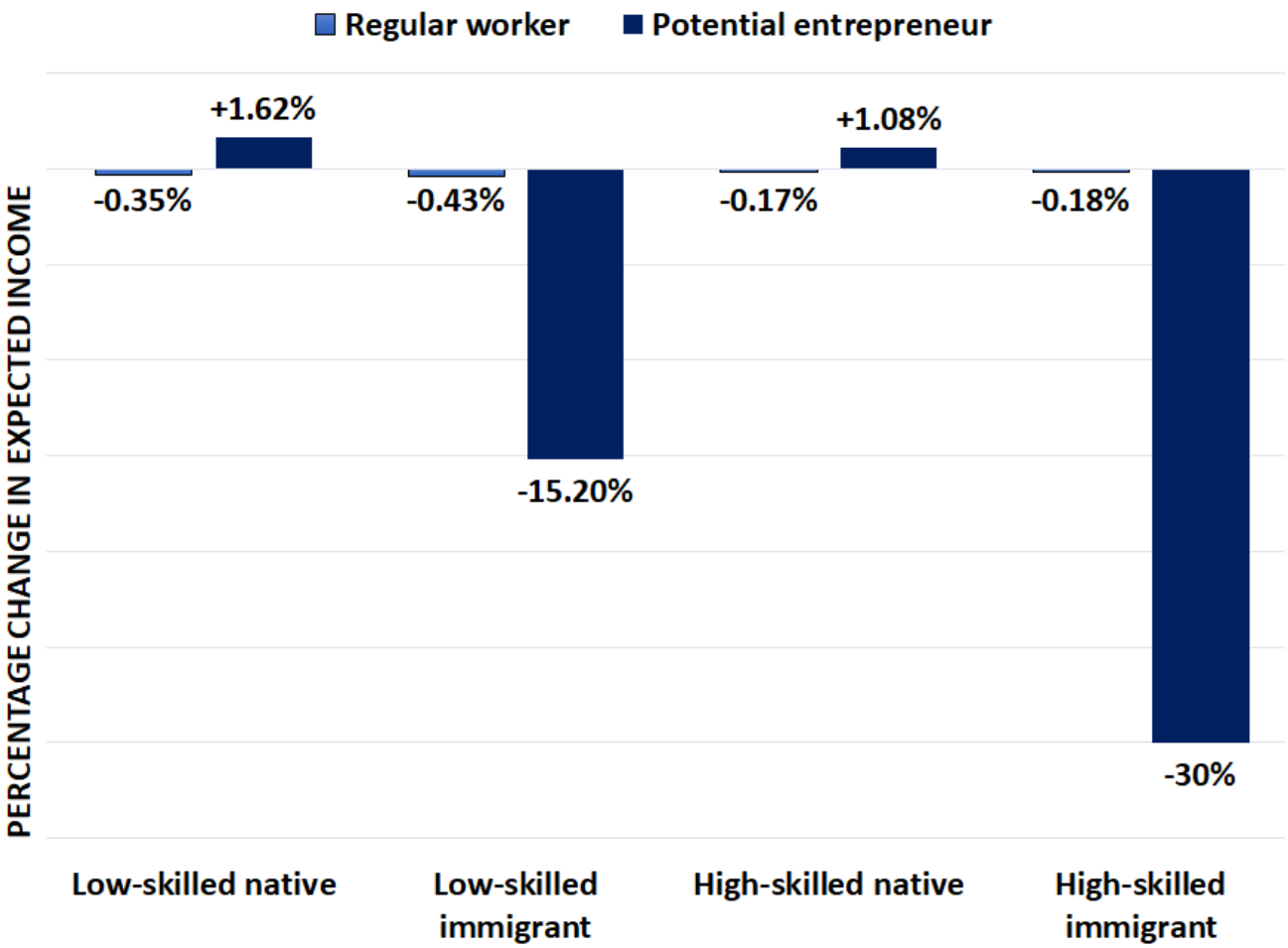


economy

- **Increase in immigrant unemployment.**

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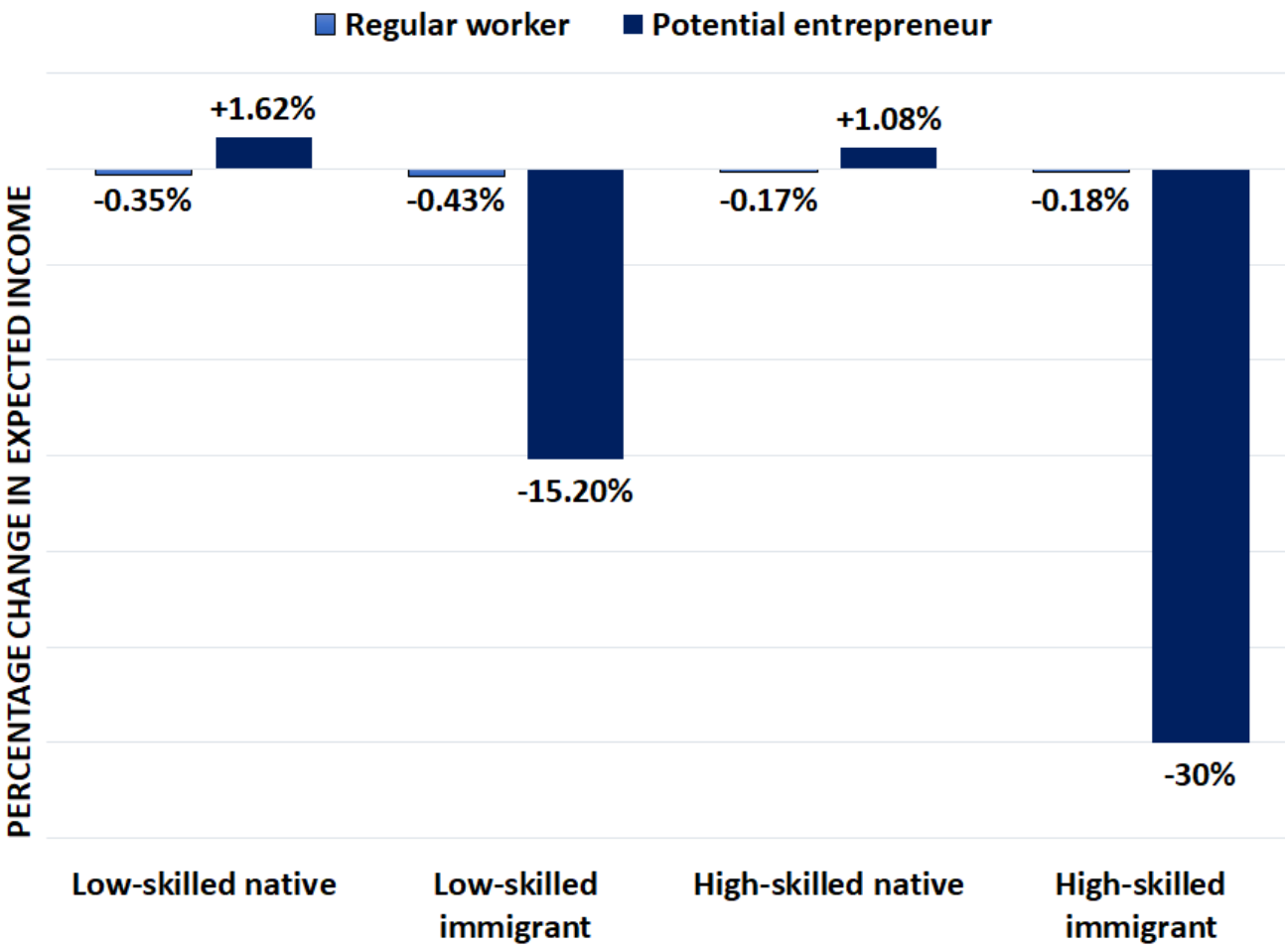


economy

- **Increase in immigrant unemployment.**
- **Reduces wage for regular workers.**

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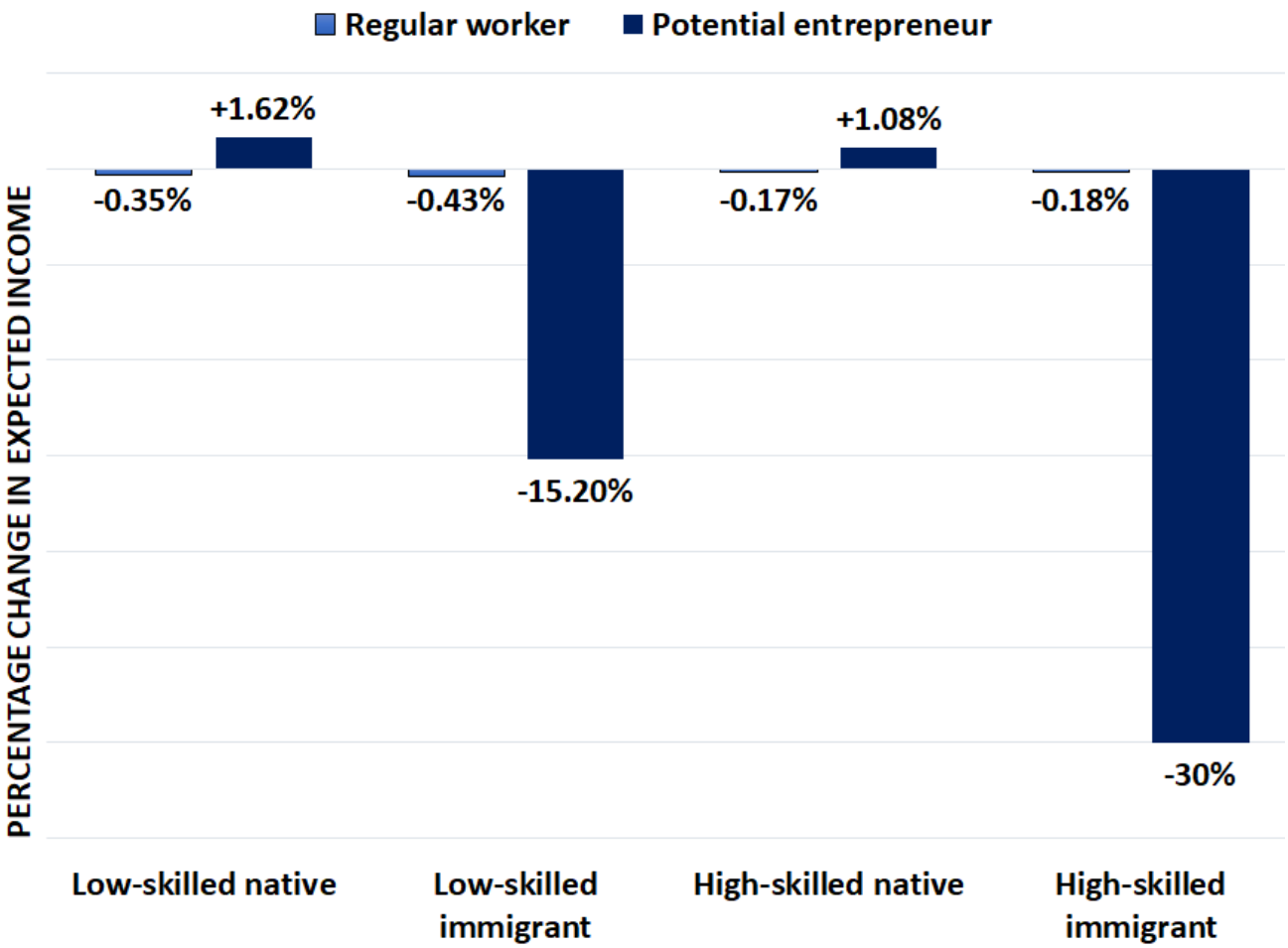


economy

- Increase in immigrant unemployment.
- Reduces wage for regular workers.
- Increase entrepreneurship among natives.

# Wrap up

**Conclusions**

- Low-skilled immigration creates both winners and losers within low-skilled group.
- Entrepreneurship reduces unemployment among immigrants.
- Immigrant entrepreneurship has spillover effects on native welfare.

**Next!**

- Validation of the model, empirical evidence in short run.

**Contributions**

- Unified framework for dual role of workers.
- New insights into the heterogeneous effects of immigration in Germany.
- Synthesis between literature on entrepreneurship and immigration.

**Thank You**

# Literature

- **Wage effect**: Borjas (1999), Borjas (2003), Ben-Gad (2004), Ben-Gad (2008), D'Amuri et al. (2010), Felbermayr et al. (2010), Aydemir and Borjas (2011), Ottaviano and Peri (2012), Dustmann et al.(2013), Dustmann et al., (2017).
- **Employment effect**: Card (1990), Altonji and Card (1991), Hunt (1992), Pischke and Velling (1997), Borjas (2003, 2006), Dustman et al. (2007), D'Amuri et al. (2010).
- **Implicit assumptions in the previous literature:**

  - perfect competition in the labour market.

  - all labour market participants are job seekers.

# Literature

- **Literature on migration and labor market frictions**: Ortega (2000), Liu (2010), Chassamboulli and Palivos (2014), Nanos and Schluter (2014), Moreno-Galbis and Tritah (2016), Battisti et al. (2018), Iftikhar and Zaharieva (2019);

  - Still assume that all labour market participants are job seekers.

- **Literature on the entrepreneurship of immigrants**: Constant et al. (2005), Constant and Zimmermann (2006), Duleep et al. (2021), Kerr & Kerr (2020), Azoulay et al. (2022);

  - Do not consider the spillovers of entrepreneurship on the job market for workers in paid jobs.

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# Economy: Workers

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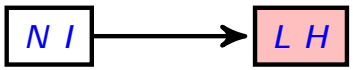

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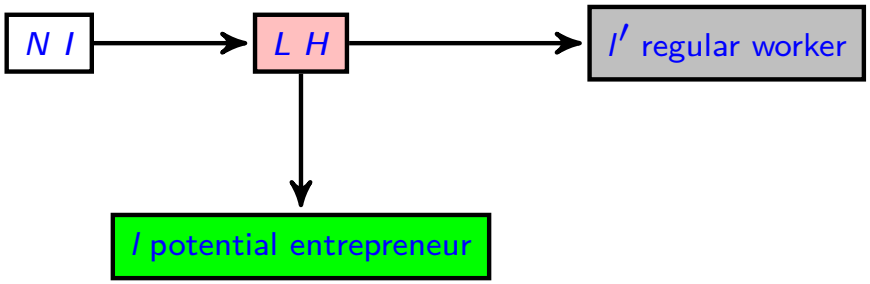

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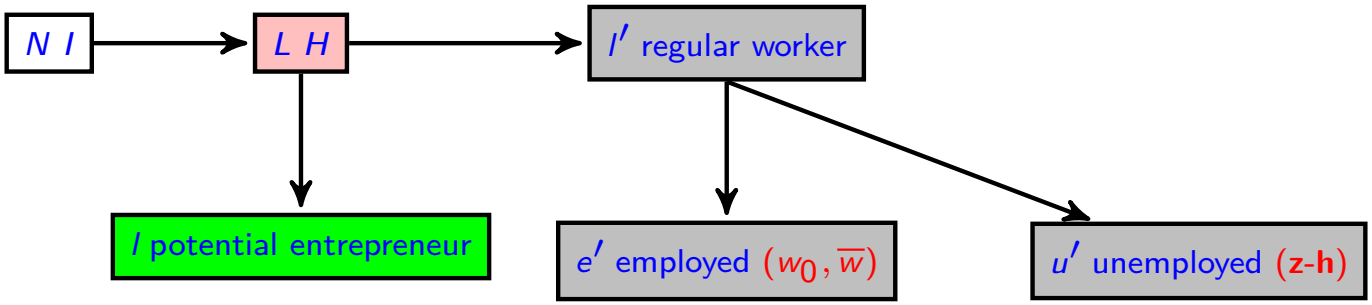

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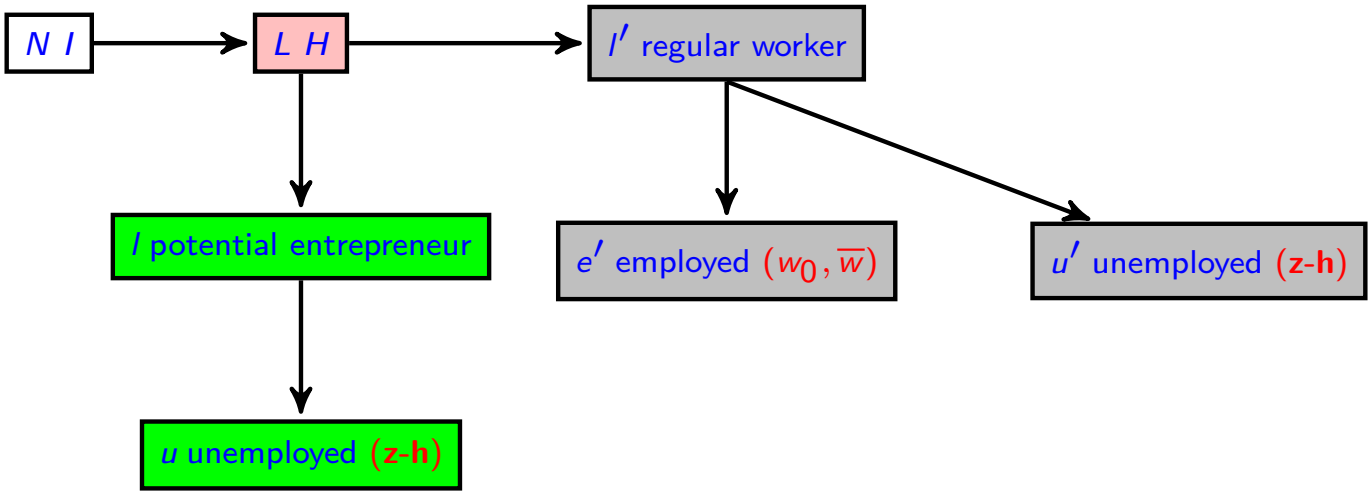

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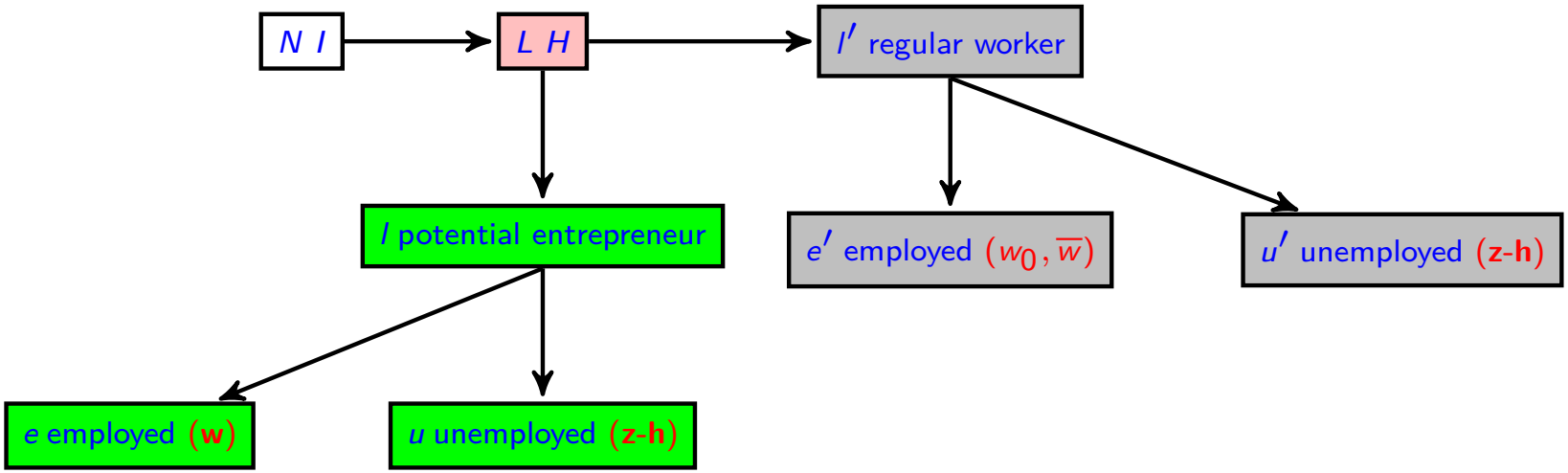

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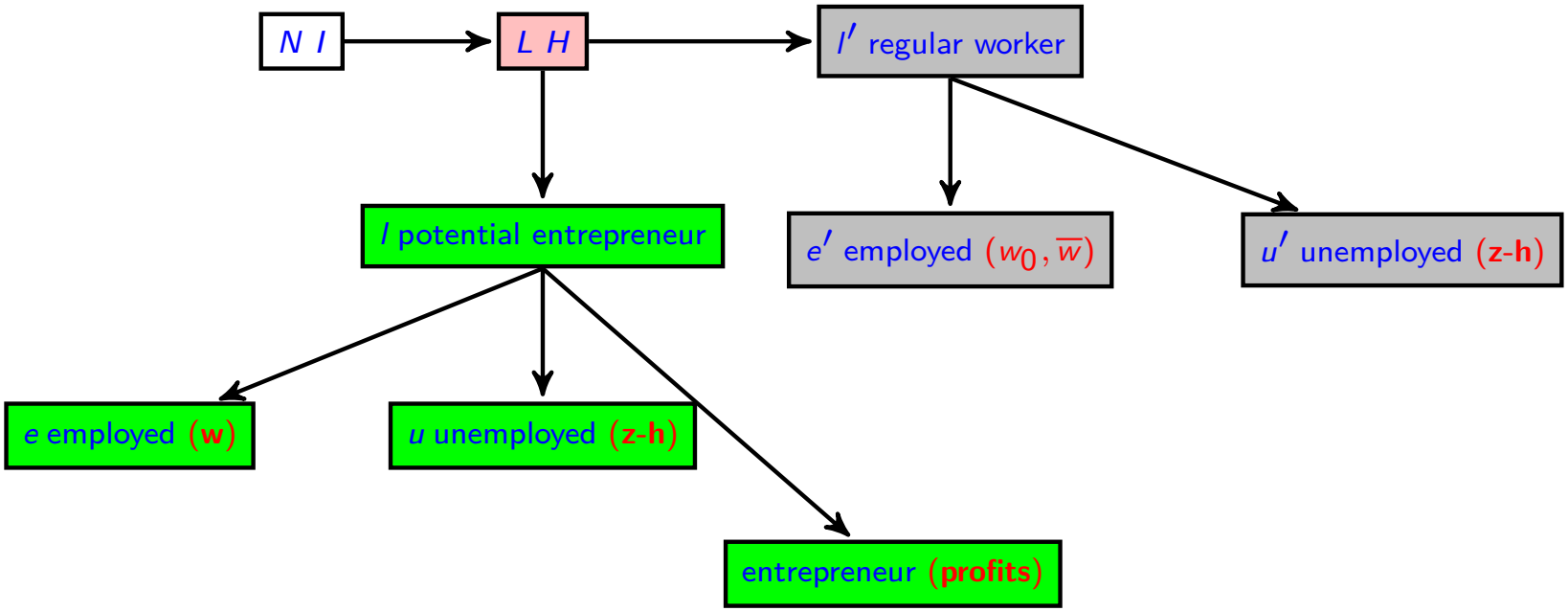

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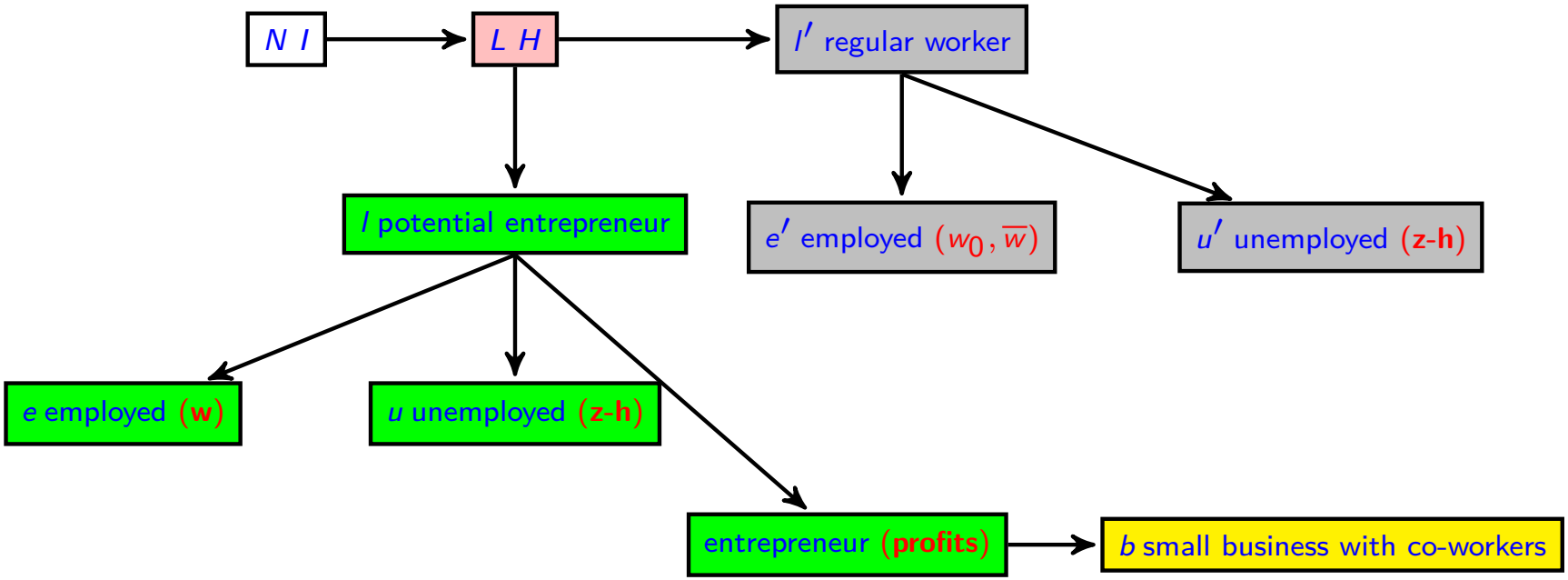

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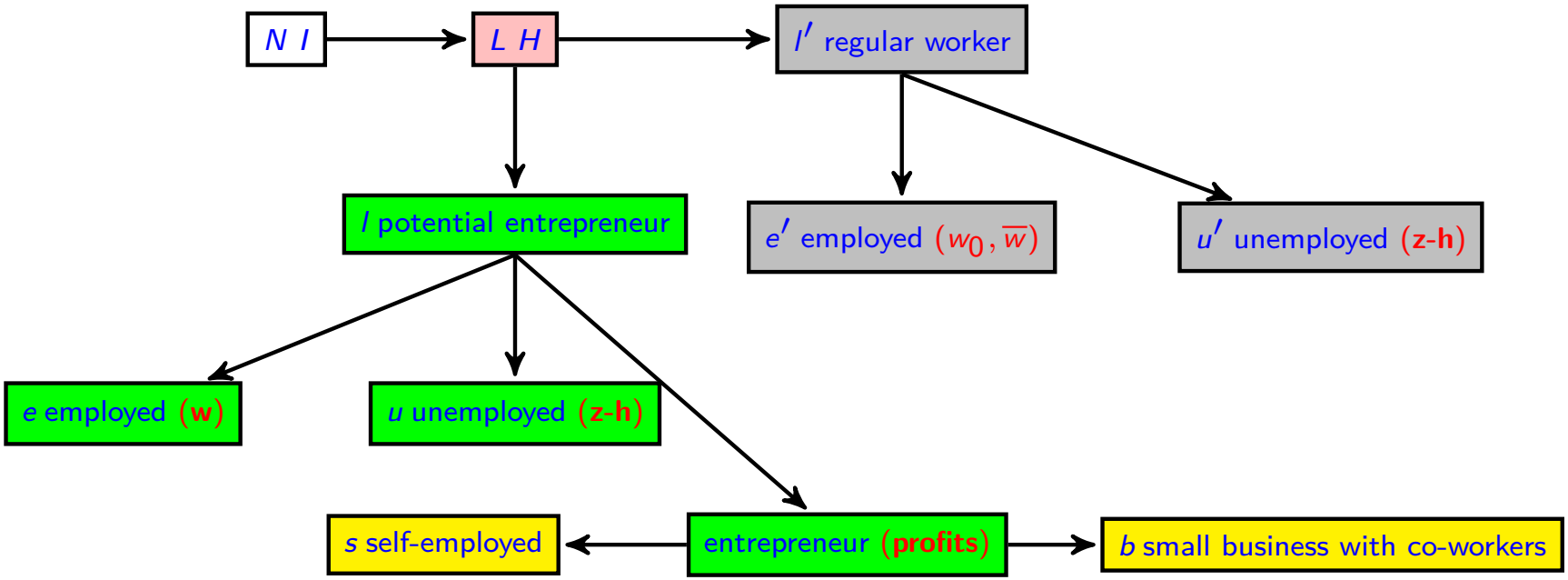

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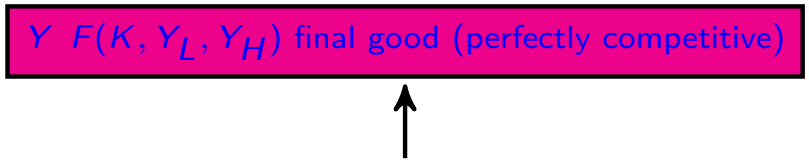


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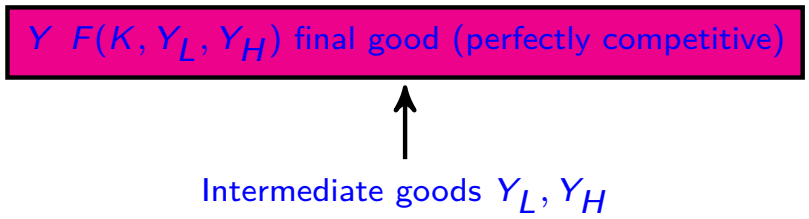


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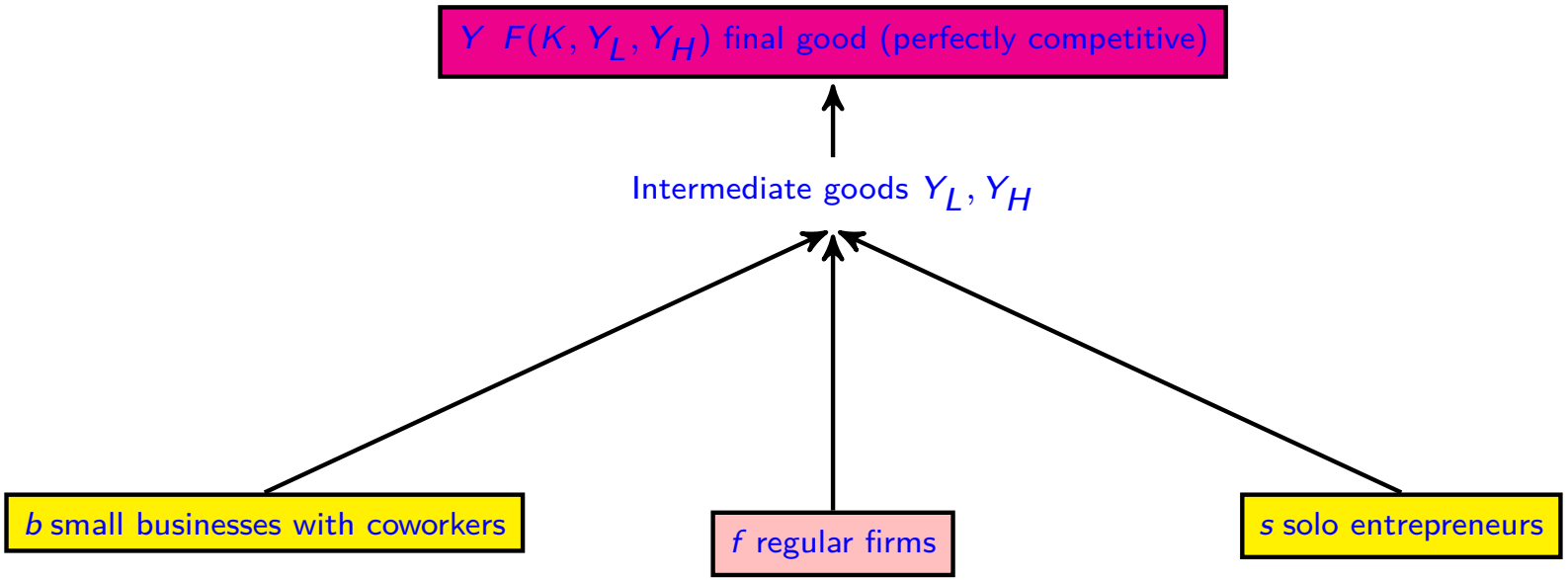


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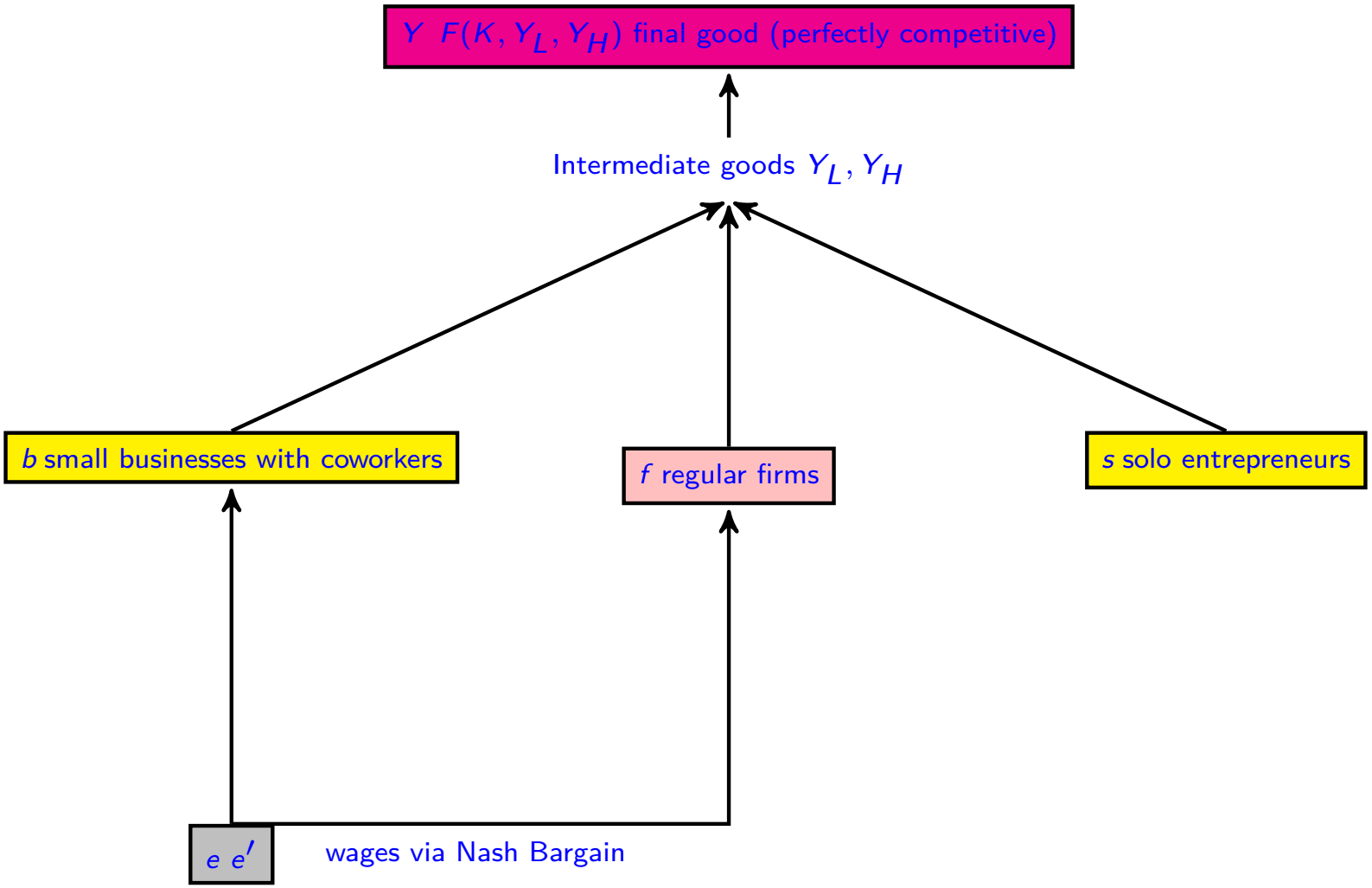


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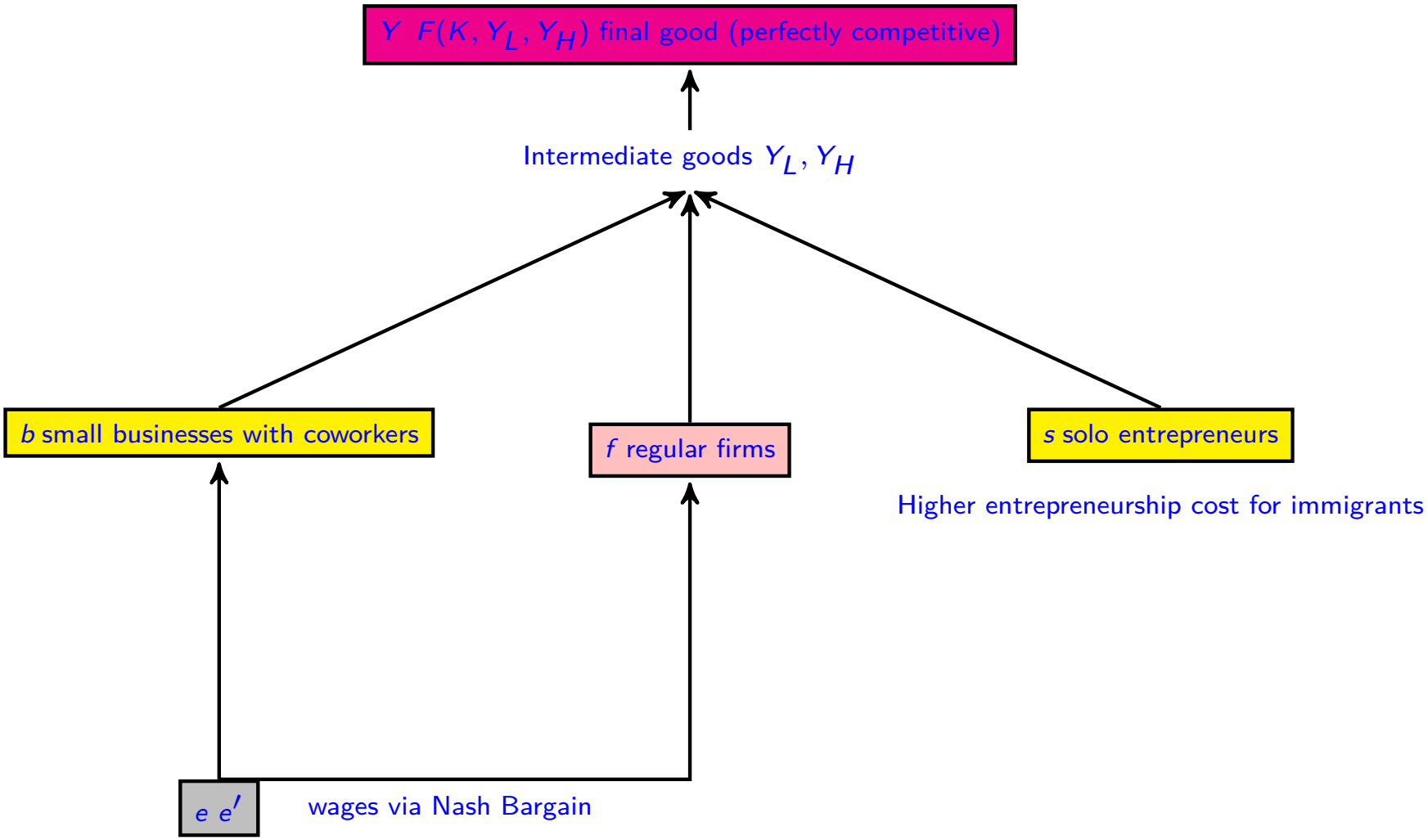


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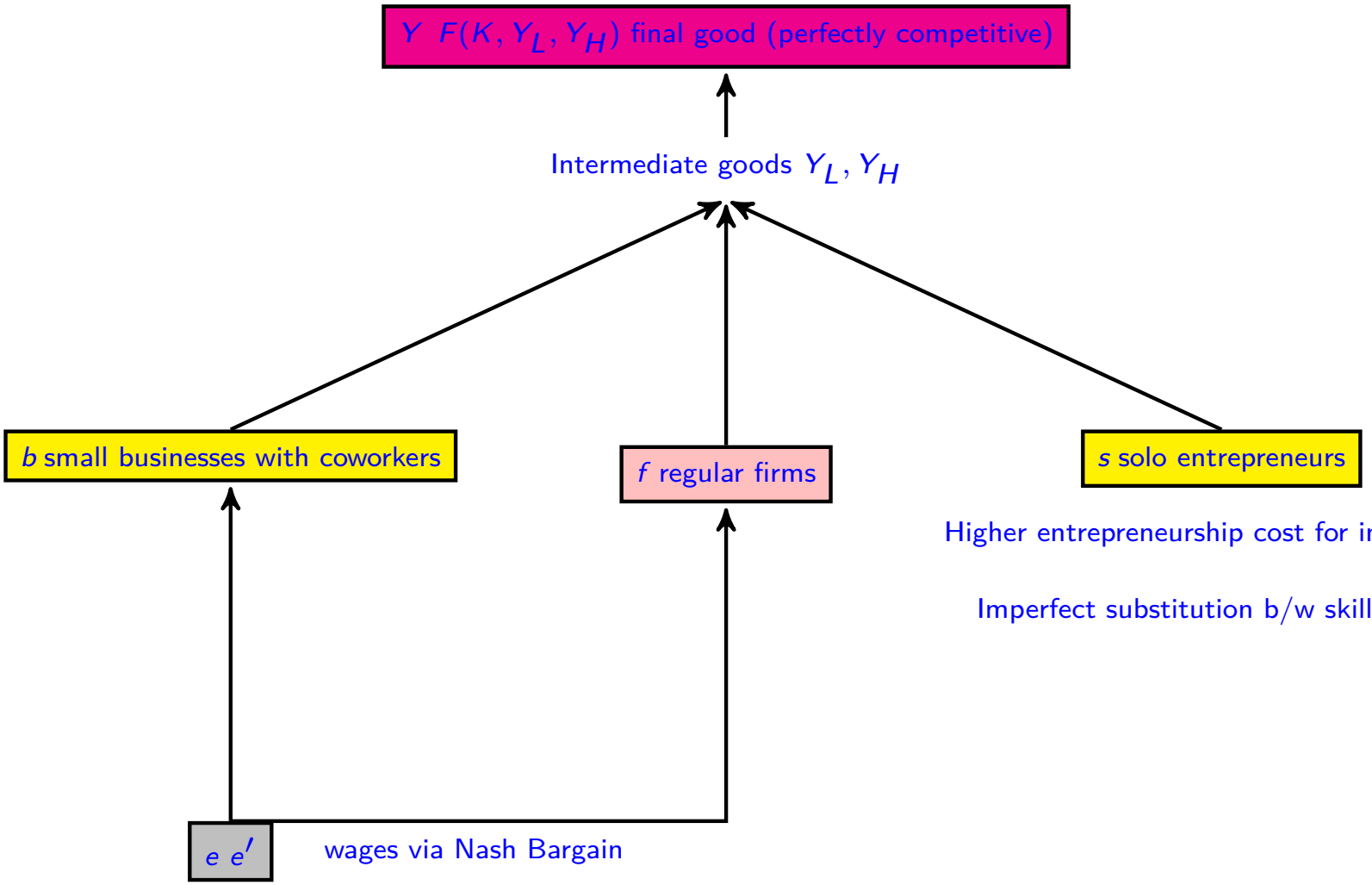


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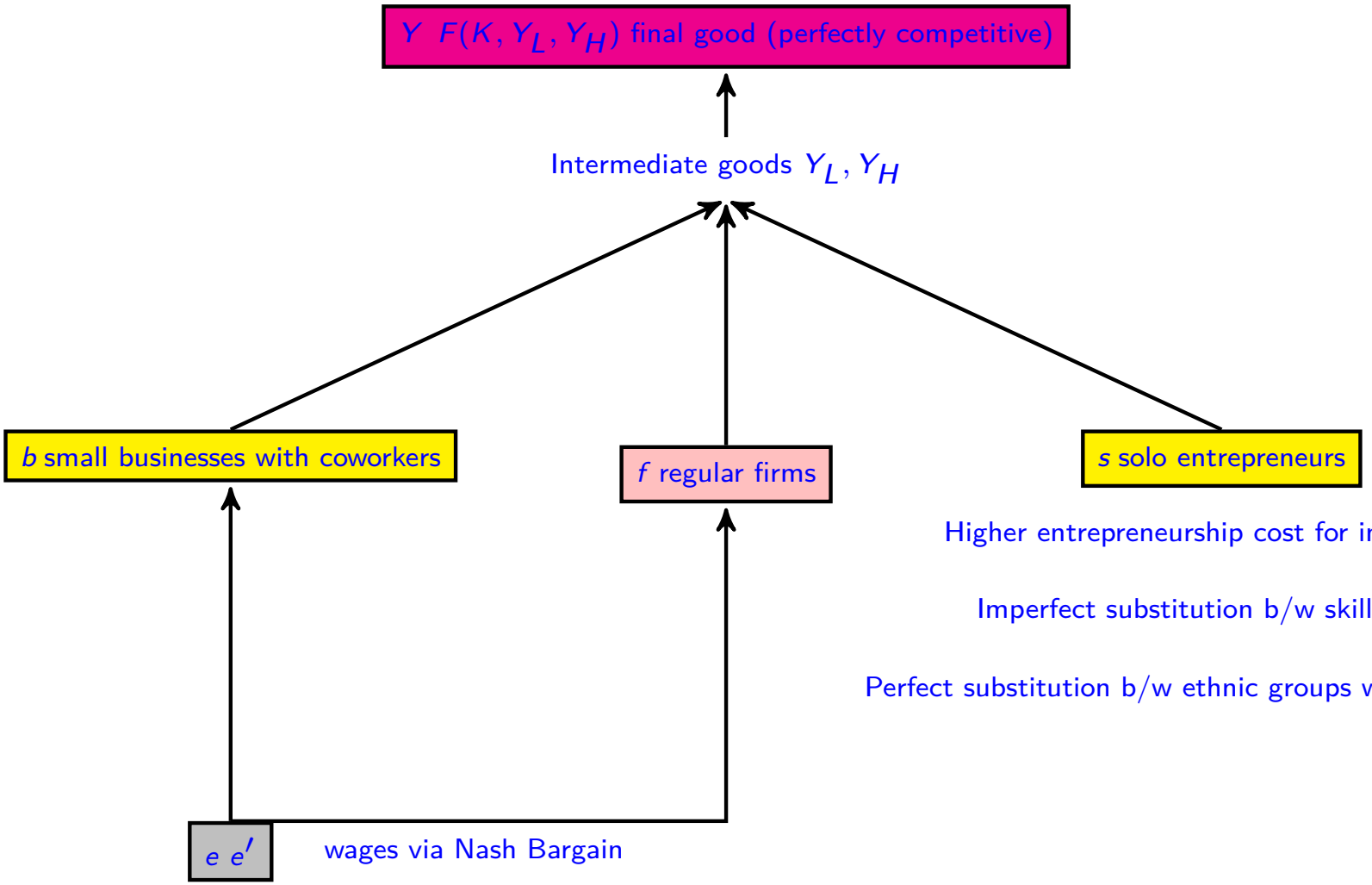


Higher entrepreneurship cost for immigrants

Imperfect substitution b/w skill groups

Perfect substitution b/w ethnic groups within skill group

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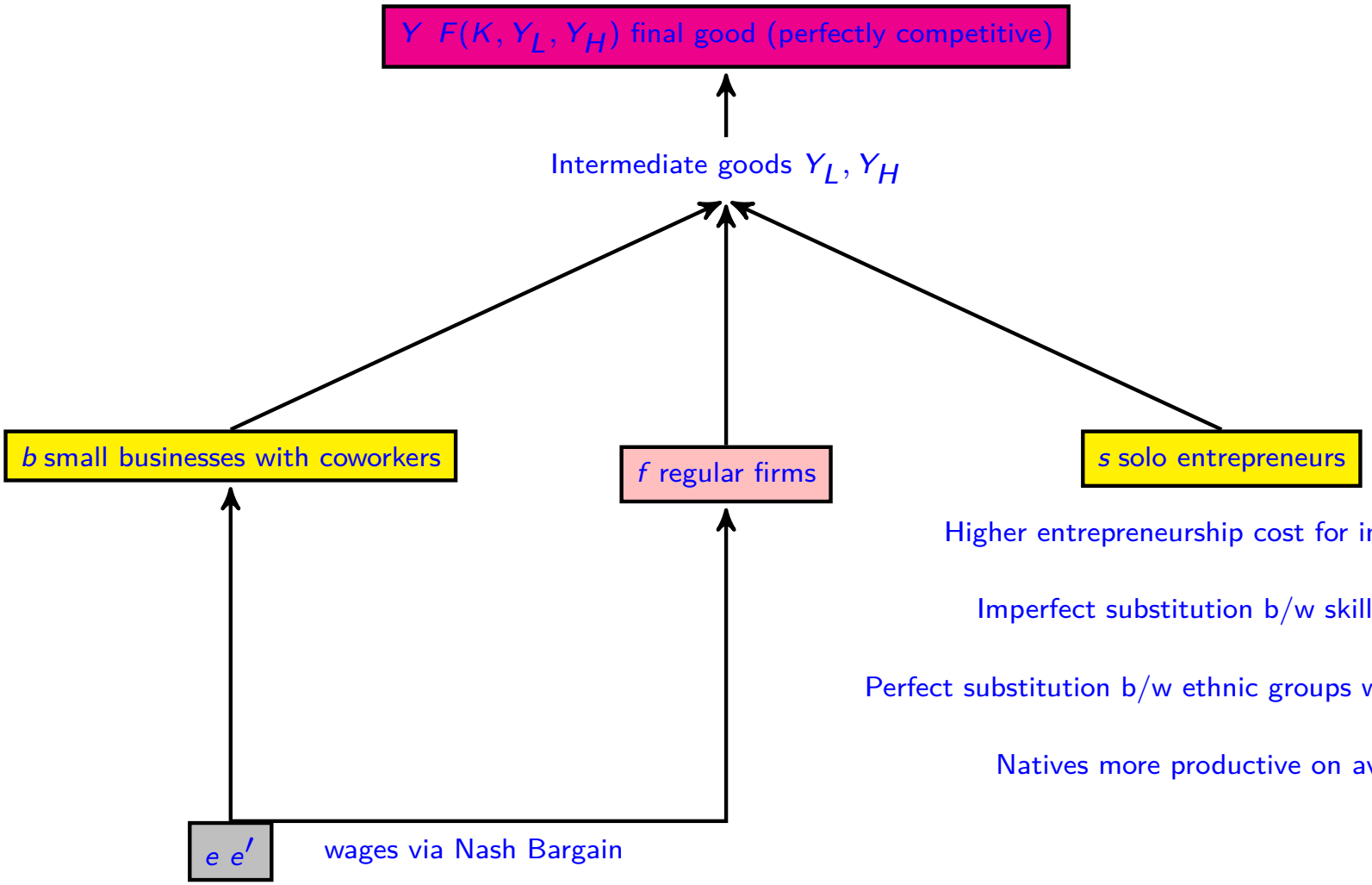


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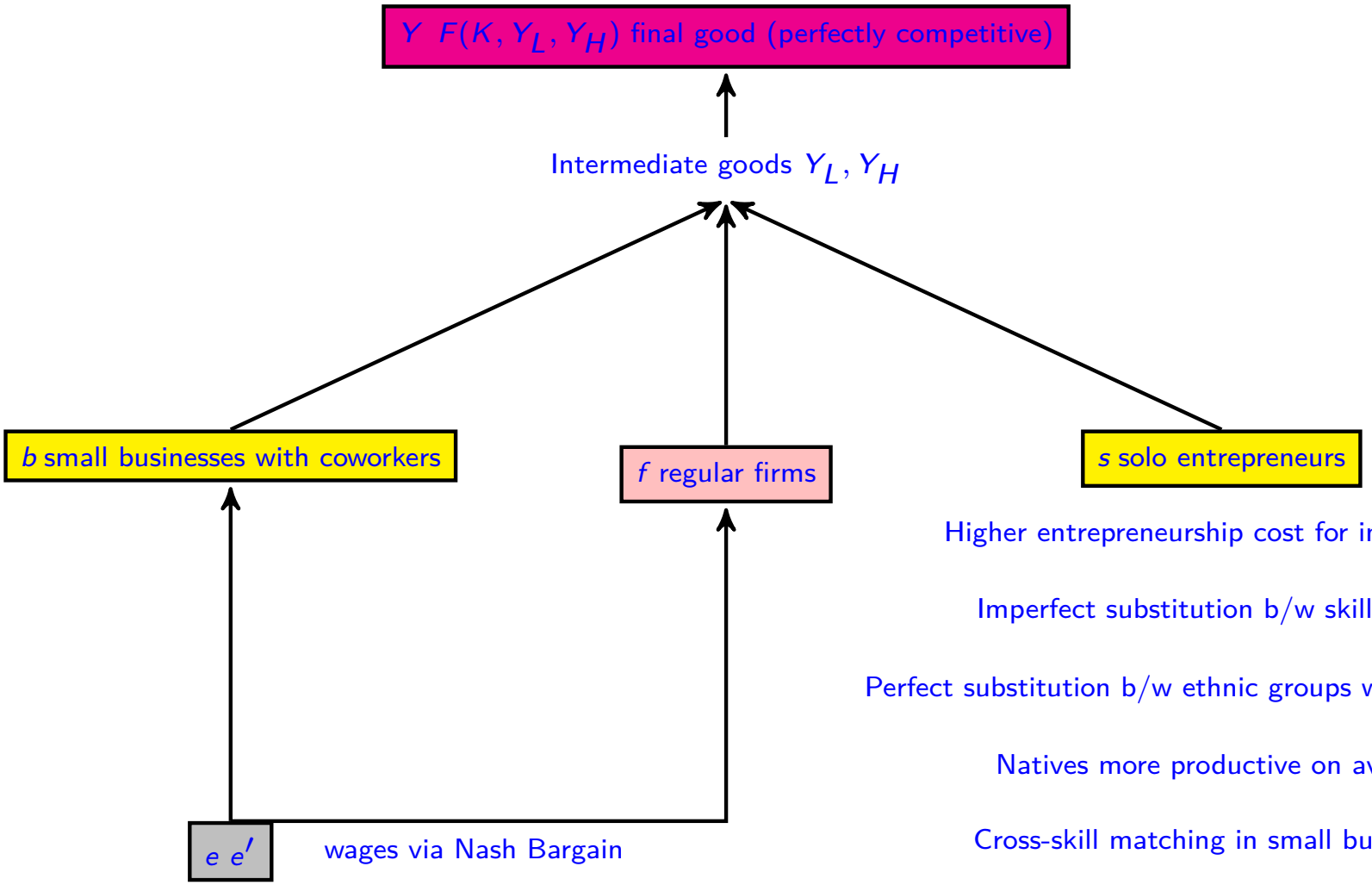


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Cross-skill matching in small businesses

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# Mechanisms

Incumbent workers (natives and immigrants

back

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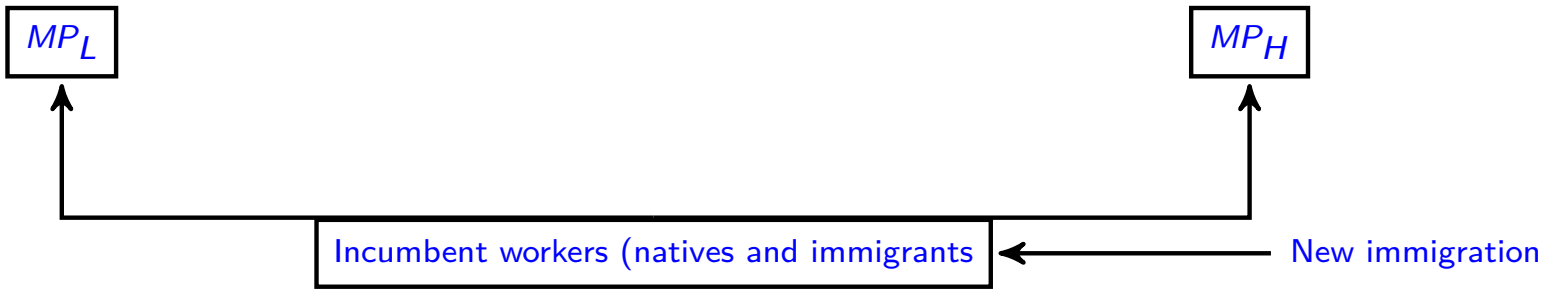


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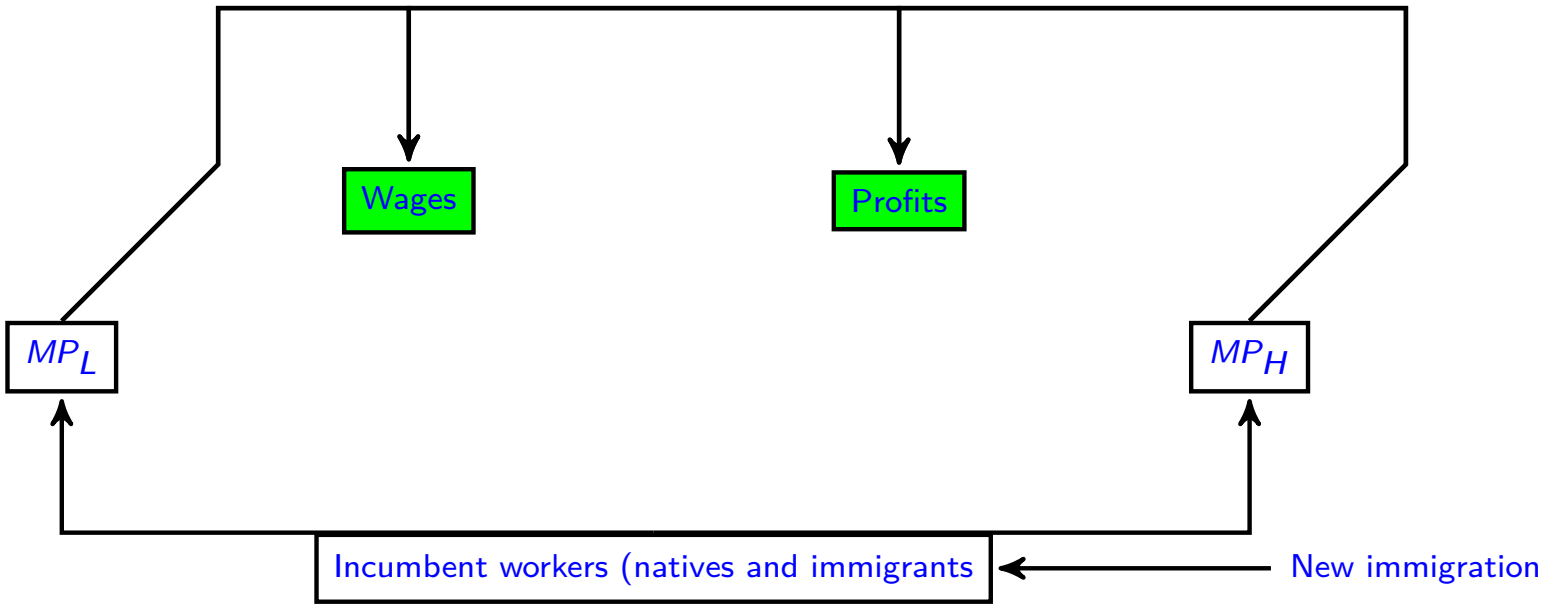


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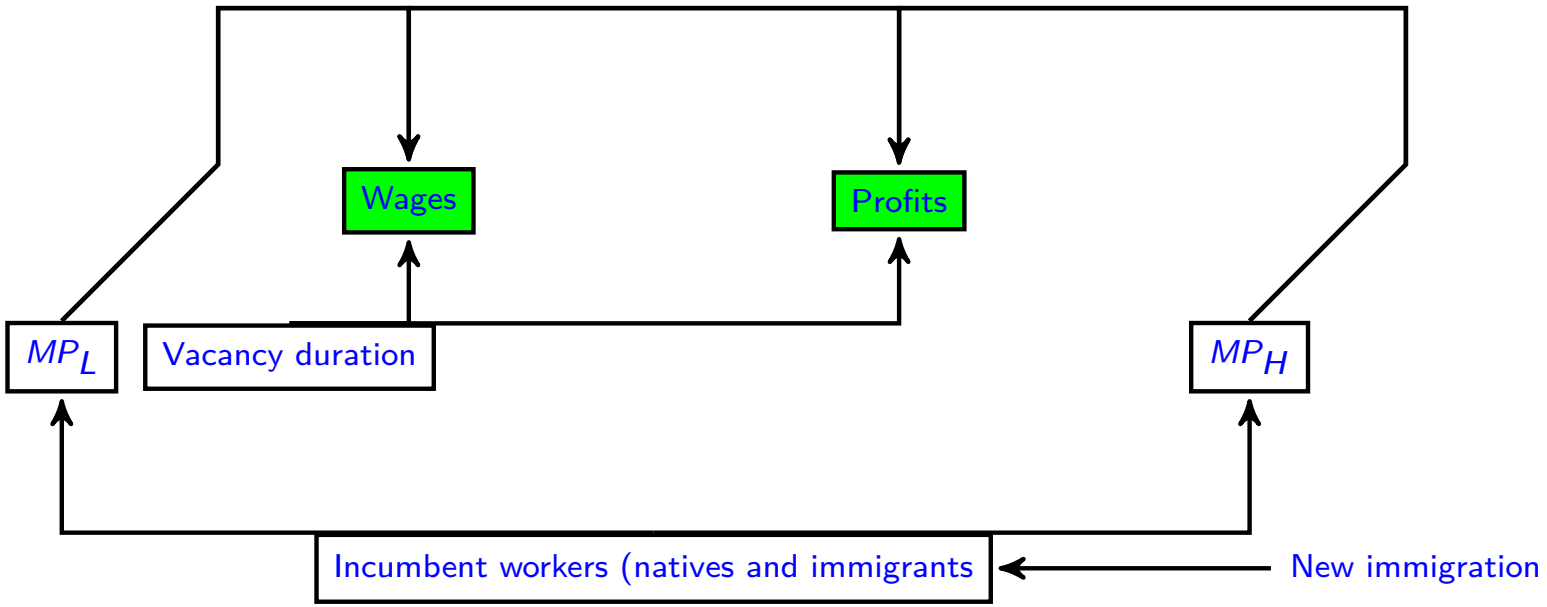


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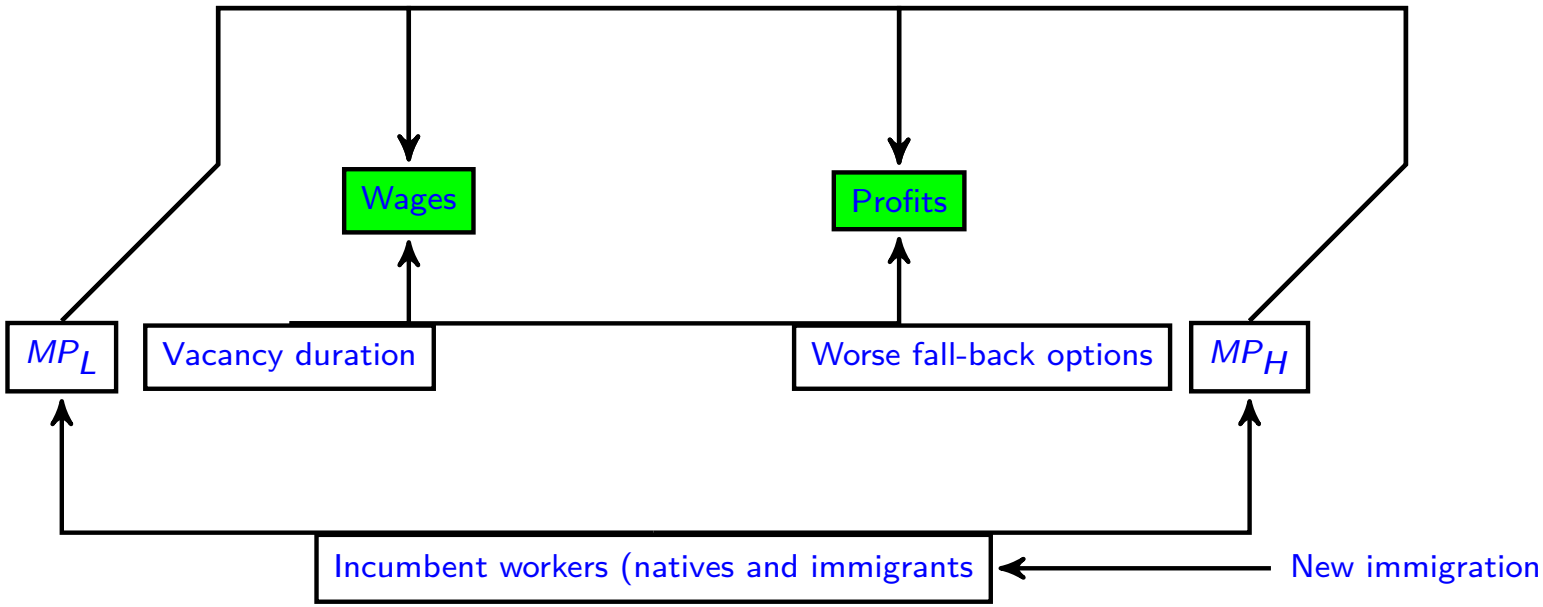


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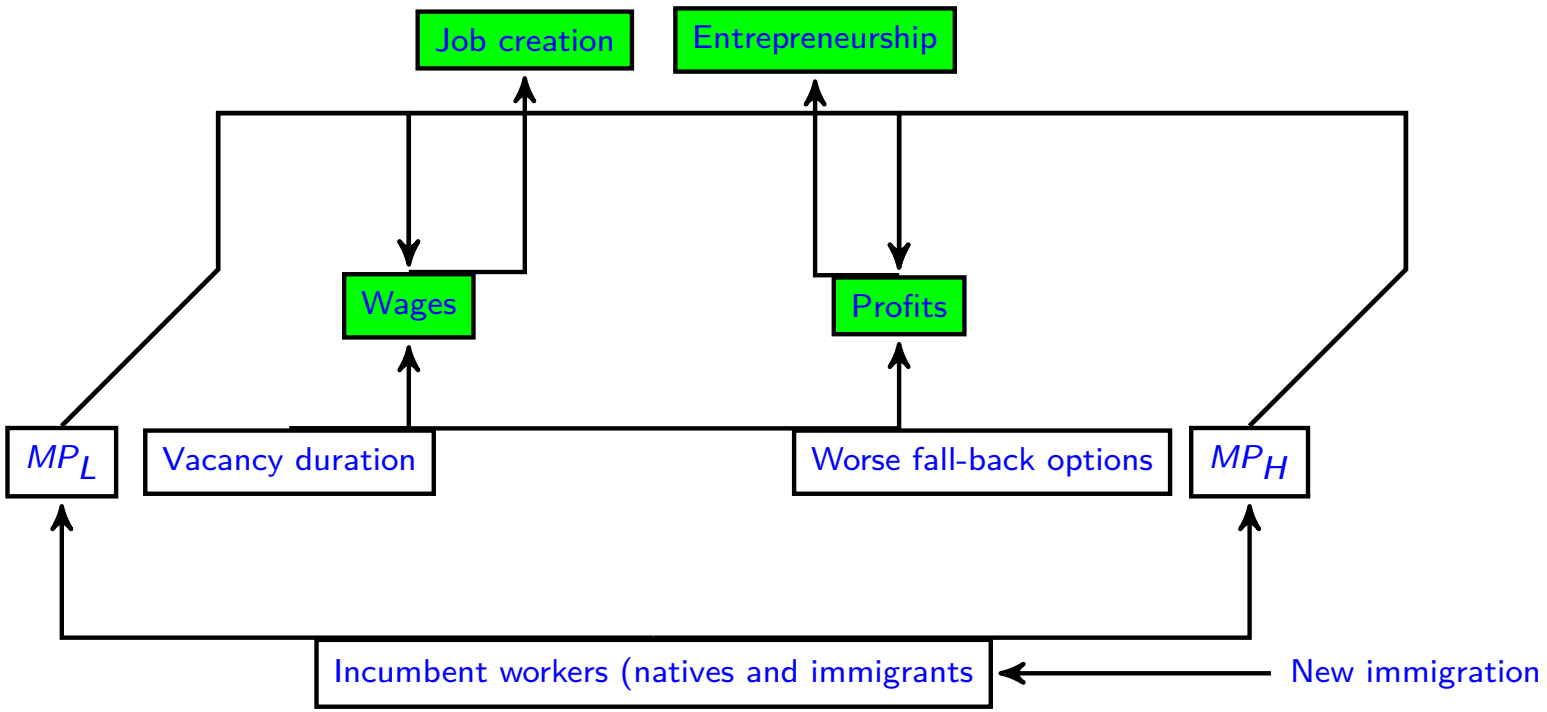


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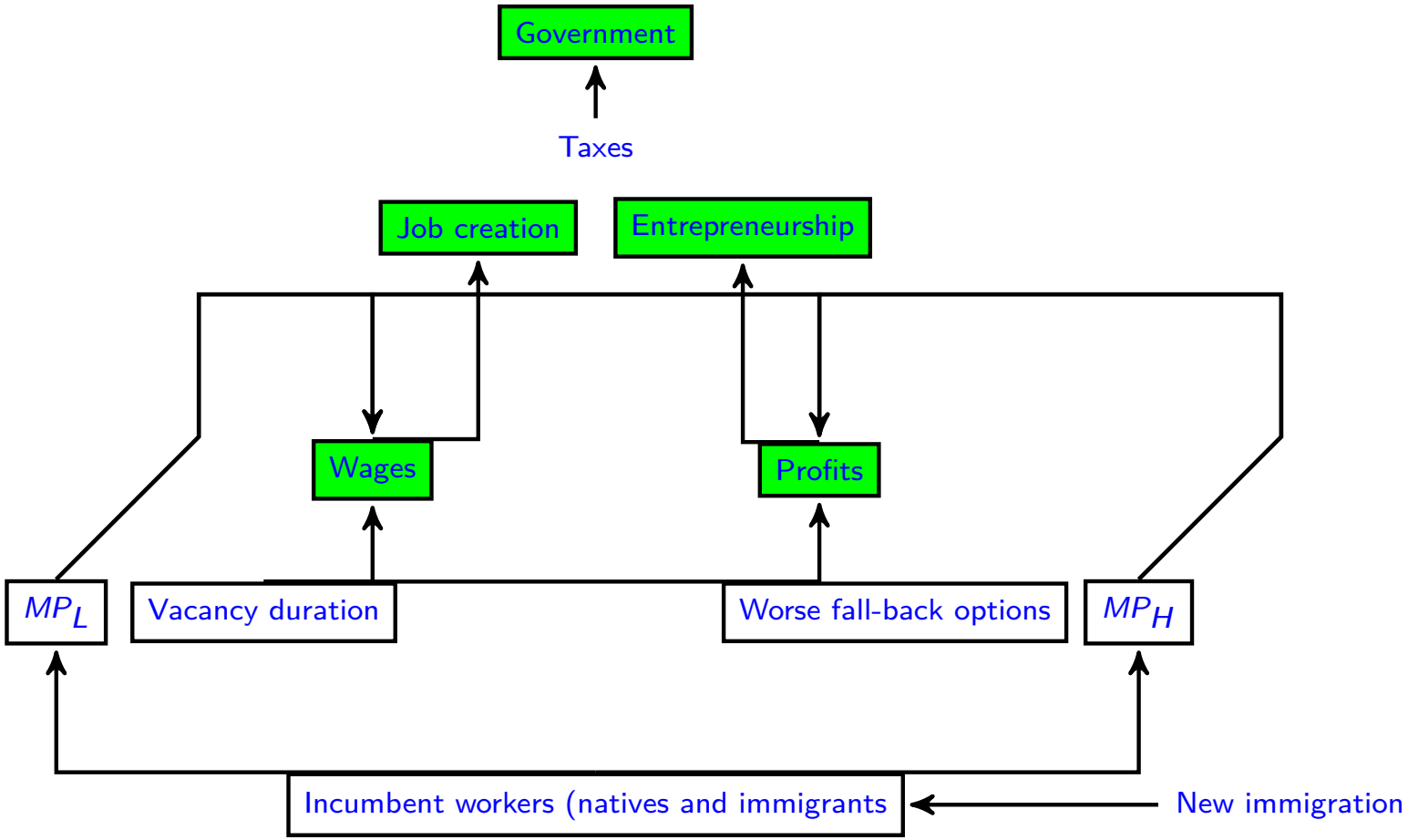


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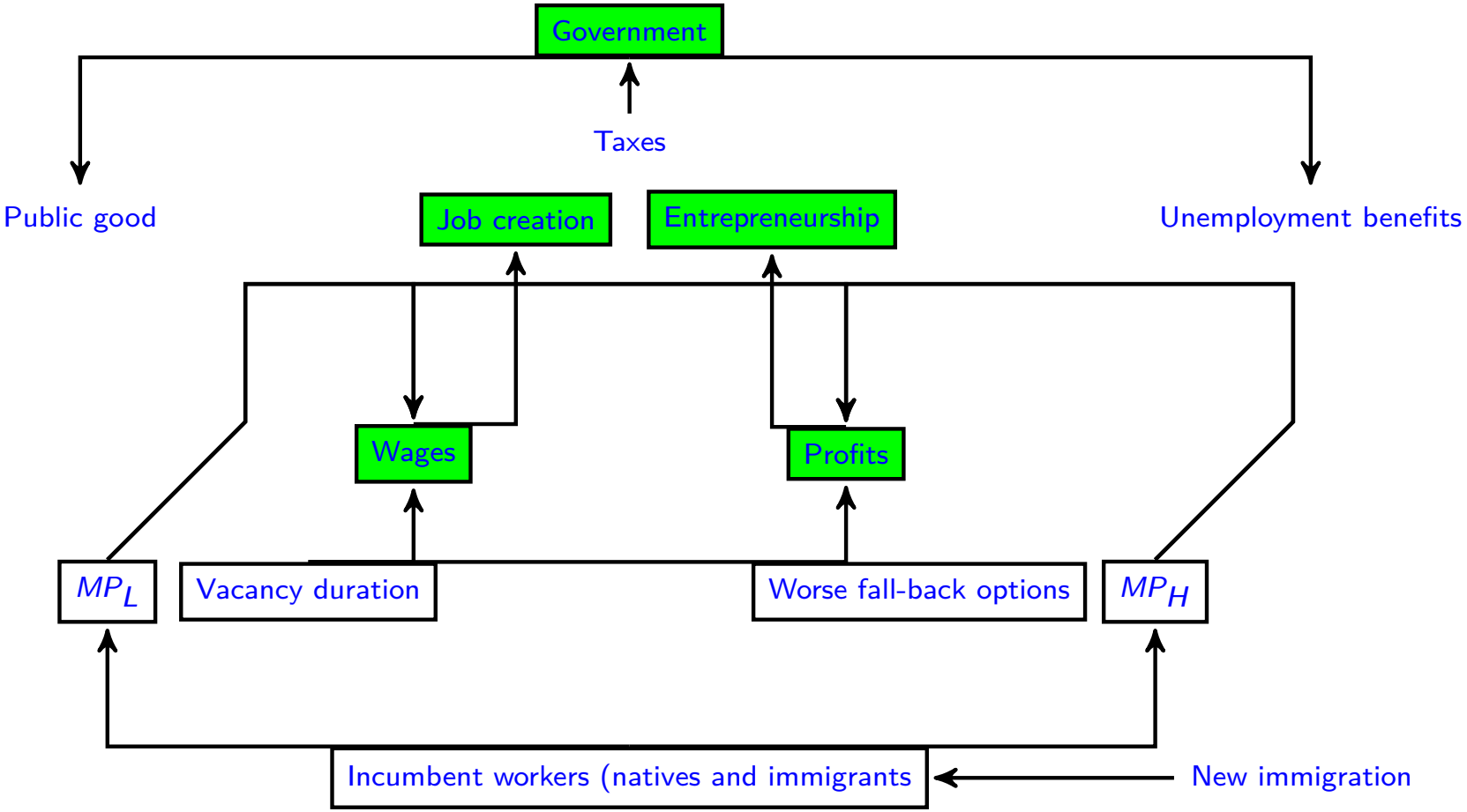


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# Value function: Unemployment

Present value of expected income in **unemployment** for potential entrepreneurs is given by:

$$rU \;\; z - h\, X\lambda(\theta)(W-U) \underbrace{\delta \int_{\alpha_u}^{\alpha_s} (E_s(x)-U)dF(x)}_{\text{solo-entr. out of necessity}}$$

$$\underbrace{\delta \int_{\alpha_s}^{\alpha_0} (E(x)-U)dF(x)}_{\text{solo-entr. out of opportunity}} \;\; \underbrace{\delta \int_{\alpha_0}^{\overline{\alpha}} (B_0(x)-U)dF(x)}_{\text{business with co-workers}}$$

where $X$ denotes the group-specific search efficiency, so that $X\lambda(\theta)$ is the job-finding rate in the market for regular jobs. value functions

# Value function: Employment

Present value of expected income in **paid employment** for potential entrepreneurs is given by:

$$rW \;\; w(1-t) \;\; \underbrace{\delta \int_{\alpha_s}^{\alpha_0} (E(x)-W)dF(x)}_{\text{solo-entr. out of opportunity}}$$

$$\underbrace{\delta \int_{\alpha_0}^{\overline{\alpha}} (B_0(x)-W)dF(x)}_{\text{business with co-workers}} - \overline{\gamma}(W-U)$$

where $\overline{\gamma}$ is the exogenous job destruction rate in regular jobs.

# Value function: Self-employment

Present value of expected income in **solo self-employment out of opportunity** is given by:

$$rE(\alpha)\ \sigma\alpha(1-t)\ \underbrace{\delta\int_{\alpha}^{\alpha_0}(E(x)-E(\alpha))dF(x)}_{\text{improving profits}}$$

$$\underbrace{\delta\int_{\alpha_0}^{\overline{\alpha}}(B_0(x)-E(\alpha))dF(x)}_{\text{business with co-workers}}-\gamma(E(\alpha)-U)$$

where $\gamma$ is the exogenous destruction rate in entrepreneurship.

# Value function: Small businesses

- Present value of expected profits **from operating a small low skill business** with $k$ immigrant and $m$ native co-workers:

$$
\begin{aligned}
rB_{km}(\alpha) \quad & \sigma\alpha(1-t) - c\ k(y_0^I - w_0^I)(1-\tau)\ m(y_0^N - w_0^N)(1-\tau) \\
& \overline{q}(\theta_0)[\mu(B_{k1m}(\alpha) - B_{km}(\alpha))\ (1-\mu)(B_{km1} - B_{km}(\alpha))] \\
& - \gamma(B_{km}(\alpha) - U)
\end{aligned}
$$

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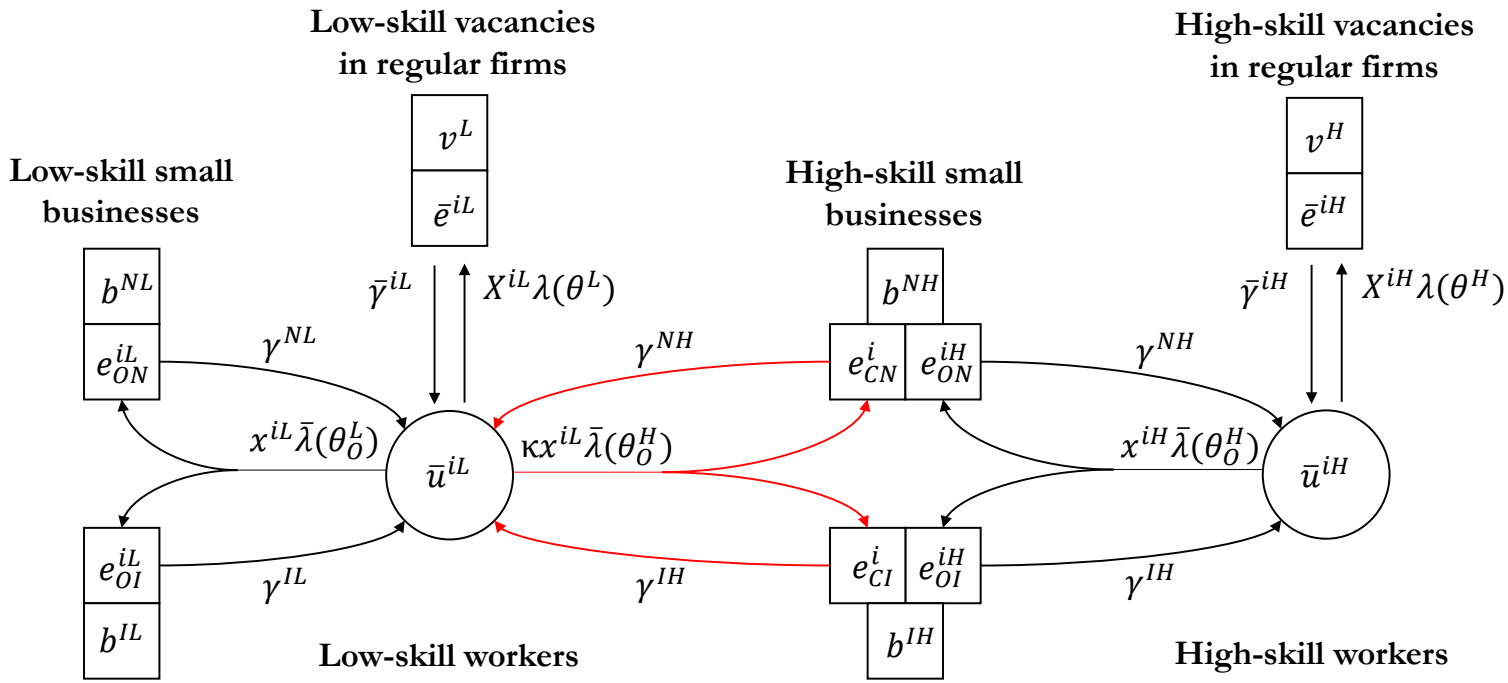
# Intermediate sector



# Final product

- Large firms are modeled as in a traditional SaM framework.
- Wages are determined via Nash-Bargaining.
- Final good

$$Y \; AK^{\eta} Z^{1-\eta}, \quad \eta \in (0..1)$$

$$Z \; [aY_L^{\rho} \; (1-a) Y_H^{\rho}]^{\frac{1}{\rho}}, \quad \rho \; 1$$

- Budget revenue; labour taxes and taxes on firm profits.
- Budget expenditure; unemployment benefits:
- Surplus used to finance a lump-sum transfer $T$.

# Calibrated parameters

| Prm. | Empirical moment/target | Definition and calibrated values |
|---|---|---|
| | *NL* *IL* *NH* *IH* | *NL* *IL* *NH* *IH* |
| $\bar{\gamma}$ | Average tenure of regular workers | Regular job destruction rate |
| | 11.55 8.78 11.55 8.78 | 0.0198 0.0270 0.0206 0.0269 |
| $\gamma$ | Share of workers in small businesses $e_0/(e_0+\bar{e})$ | Business destruction/exit rate |
| | 0.265 0.270 0.165 0.212 | 0.0296 0.0358 0.0305 0.0292 |
| $\delta$ | Share of active entrepreneurs $(b+s)/l$ | Transition rate to entrepreneurship |
| | 0.547 0.525 0.568 0.577 | 0.5893 0.5355 1.1149 0.5173 |
| $x$ | Unempl. rate of immigrant workers $\bar{u}/(d-l)$ | Search intensity for small businesses |
| | - 0.141 - 0.091 | 1 0.5713 1 0.2851 |
| $X$ | Unempl. rate of immigrant pot. entrepreneurs $u/l$ | Search intensity for regular jobs |
| | - 0.049 - 0.039 | 1 0.7593 1 0.2750 |
| $c$ | Share of solo-entrepreneurs $(b_0+s)/(b+s)$ | Flow cost of a small business |
| | 0.586 0.607 0.591 0.459 | 1.1636 1.2919 2.2448 3.0985 |
| $\varsigma$ | Businesses with 1-9 coworkers $\sum_{n=1}^{9} b_n/(b+s)$ | Entrepreneurial productivity |
| | 0.366 0.362 0.326 0.425 | 0.2499 0.255 0.3703 0.2635 |
| $\varphi_{0N}$ | Profits of small businesses with coworkers | Quantities in small (native) businesses |
| | 2.63 2.77 4.20 4.52 | 0.2973 0.2398 0.4109 0.3363 |
| $\varphi_{0I}$ | Av. wages in small businesses $\bar{w}_0$ | Quantities in small (immigrant) businesses |
| | 1 0.8674 1.2950 1.1144 | 0.3437 0.3097 0.5293 0.4227 |
| $\bar{\varphi}$ | Av. wages of workers in regular jobs $\bar{w}$ | Quantities of workers in regular jobs |
| | 1.625 1.492 2.940 2.630 | 0.9727 1 0.9157 1 |
| $\varphi$ | Wages of pot. entrepreneurs in regular jobs $w$ | Quantities of pot. entrepr. in regular jobs |
| | 1.222 1.246 1.884 1.309 | 0.8954 0.9004 0.8619 0.7440 |
| $z$ | 60% replacement rate in the 1st year | Unemployment benefits of pot. entrepreneurs |
| | and ALG II assistance afterwords | 0.3719 0.3723 0.3757 0.3709 |
| $\bar{z}$ | 60% replacement rate in the 1st year | Unemployment benefits of regular workers |
| | and ALG II assistance afterwords | 0.3838 0.3809 0.3948 0.3869 |
| $M$ | Unempl. rate of native entrepreneurs $u/l$ | Matching multiplier, regular jobs |
| | 0.035 - 0.014 - | 0.5319 0.9955 |
| $\bar{M}$ | Unempl. rate of native workers $\bar{u}/(d-l)$ | Matching multiplier, small businesses |
| | 0.085 - 0.022 - | 0.0748 0.1809 |
| $\bar{c}_k$ | Average job-filling rate $q(\theta)$ | Capital cost in regular firms |
| | 1.5500 1.2398 | 3.3821 2.5642 |
| $c_h$ | Rebien, Stops, Zaharieva (2020) | Vacancy posting cost |
| | | 0.7431 2.3344 |
| $\beta_0$ | Assumption $w_{0I}^N/w_{0I}^I = \bar{w}^N/\bar{w}^I$ | Bargaining power of workers in small firms |
| | 1.0819 1.1905 | 0.4564 0.4222 |
| $r$ | Annual discount rate = 5% | (Quarterly) Discount rate |
| | | 0.0125 |
| $\eta$ | Chassamboulli and Palivos (2014) | Elasticity of subst. between $K$ and $Z$ |
| | Battisti et al. (2018) | 0.350 |
| $\rho$ | Ottaviano and Peri (2012) | Elasticity of subst. between $Y^H$ and $Y^L$ |
| | Battisti et al. (2018) | 0.500 |
| $R$ | Chassamboulli and Palivos (2014) | (Quarterly) cost of capital |
| | Battisti et al. (2018) | 0.030 |
| $A$ | Normalization $\bar{y}^{NH} = P_H$ | Total factor productivity |
| | | 2.5630 |
| $a$ | Normalization $\bar{y}^{NL} = P_L$ | Income share of $Y_L$ |
| | | 0.5547 |
| $\kappa$ | Average tenure in small firms | Cross-skill matching parameter |
| | 8.2369 | 0.1700 |
| $\zeta$ | Regression $\ln q(\theta)$ on $\ln\theta$ | Elasticity of the matching function |
| | | 0.47 |
| $\beta$ | Ratio of nominal wages to GDP | Bargaining power of workers in regular jobs |
| | 0.28 | 0.9084 |

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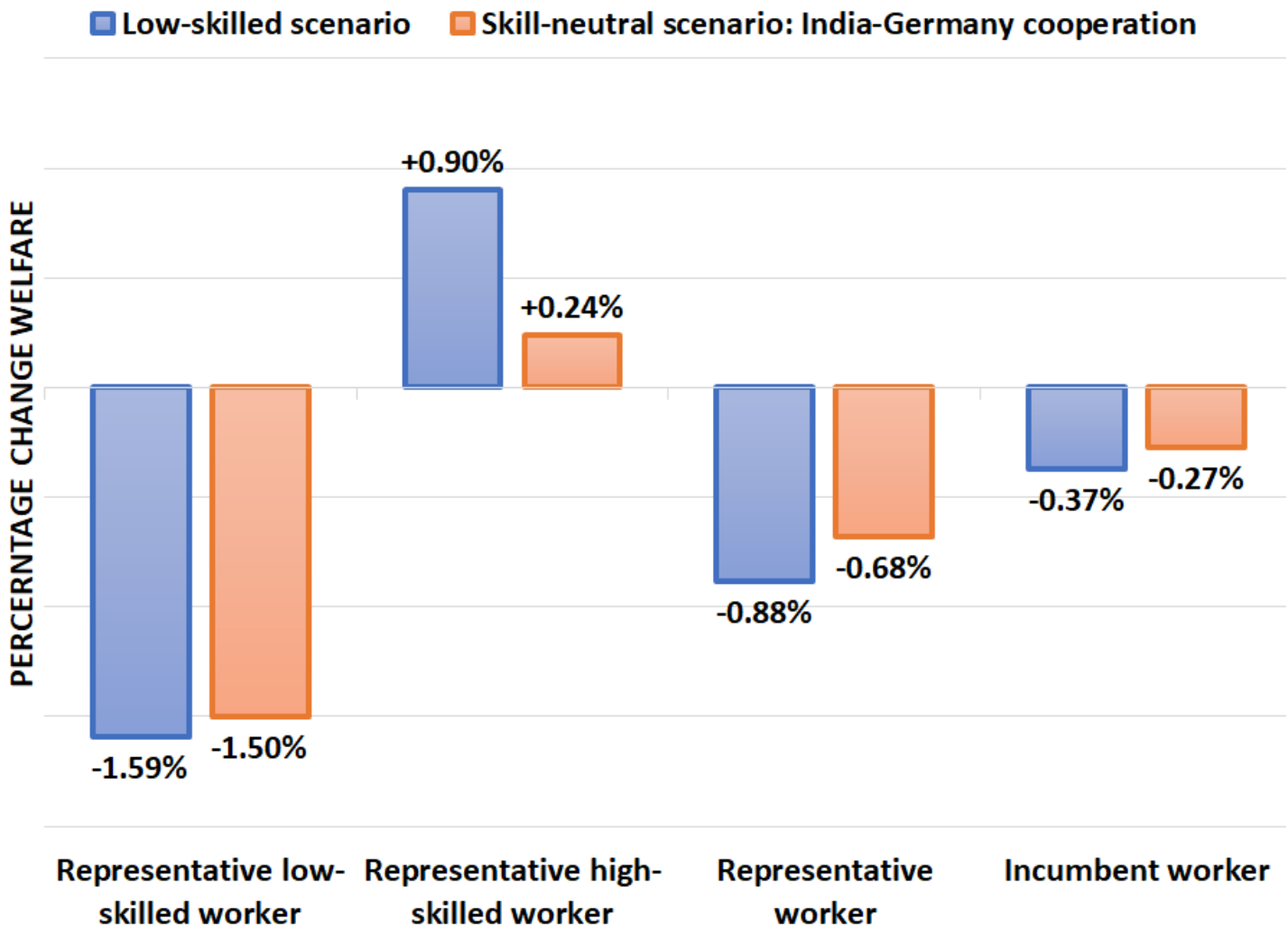
# Results: Welfare effects of German-Indian cooperation

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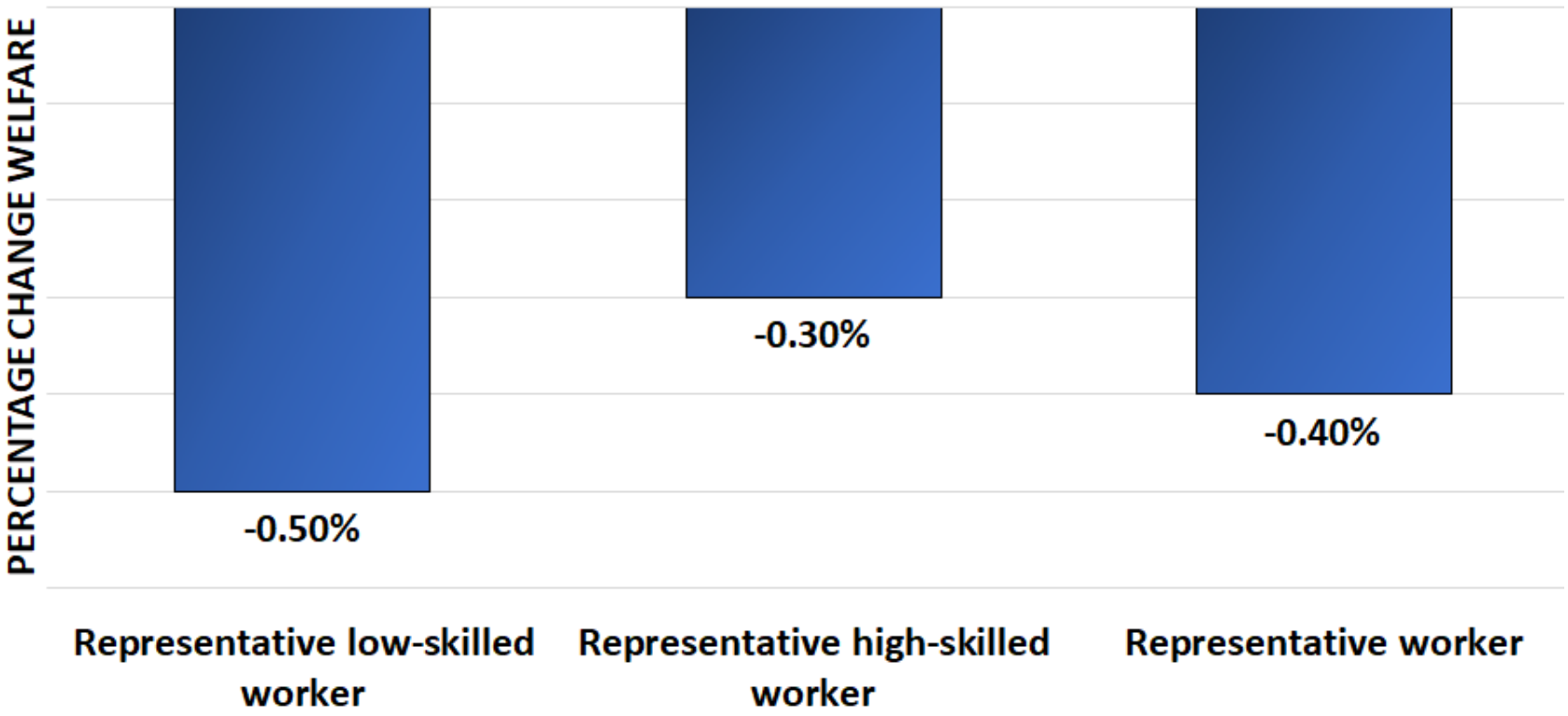
# Results: Welfare effects of a ban on entrepreneurship

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