

Globalized Market for Talents and Inequality: What Can Be Learnt from soccer?

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Brain drain and cross-country inequality

- ▶ Market for talents is more and more globalized:
 - ▶ 1990-2000: stock of h-s migrants to 30 OECD countries increased from 12.5 to 20 million (DLM, 2009)
 - ▶ 1975-2000: stock of h-s migrants to 6 major OECD countries increased from 4.2 to 17.2 million (Defoort 2006)
 - ▶ Greater propensity to move for elite workers such as engineers, physicians, researchers (DR, 2009)
- ▶ How does globalization affect inequality? Complex issue:
 - ▶ Bidirectional causality (dIC & D, 2012): brain drain is due to supply-side & demand-side reasons
 - ▶ Many feedback effects of migration (DR, 2012)
 - ▶ We lack a source of identification of brain drain shocks

Goal of my paper

- ▶ Use football as a laboratory to quantify the inequality impact of globalization shocks:
 - ▶ Market for talented players is one of the most globalized: 50% of talents from the best 65 football nations were playing abroad in 2010
 - ▶ Strong and increasing concentration in top European leagues
 - ▶ Source of identification = 1995 Bosman rule: liberalization of EU-to-EU movements, relaxation of constraints on the use of non-EU players in EU leagues
- ▶ How has Bosman rule affected cross-country inequality, average quality in football, score of "poorer" countries?

Globalization in football

Bosman ruling 1995



- ▶ Former Belgian footballer
- ▶ Complained about RFC Liege decision to require huge transfer fee
- ▶ Took his case to the EU Court of Justice and won
- ▶ Unexp. liberalization shock
 - ▶ Free mobility in EU
 - ▶ Relaxation of restrictions on non-EU players

The Bosman rule

The last two Italian winners of the Champions league before and after Bosman rule (1994 and 2010)



8 Italians/3 foreigners



0 Italians/11 foreigners

My methodology

I use quantitative theory...

- ▶ Construct a unique macrodata set on football (bilateral migration, performance of national teams and leagues)
- ▶ Develop of a micro-founded model
- ▶ Illustrate the key mechanisms at work using a 2-country simplified version of my model
- ▶ Use appropriate econometric techniques to estimate structural parameters: my full model is calibrated to perfectly match the 1978-2010 data (Bosman affects migration)
- ▶ Simulate the counterfactual 1994-2010 trajectory if Bosman rule had never happened

Main conclusions

Liberalization of the market for talented players...

- ▶ Very rapid increase in inequality between leagues (due to greater concentration of players in the top European leagues)
- ▶ Very rapid decrease in inequality between national teams (best players of all nations now play together)
- ▶ Progressive global increase in the quality of football (increasing migration prospects have stimulated the production of talents in poor countries)
- ▶ Changes in the ranking of leagues and national teams

Database

► Principles:

- Database is restricted to the best 65 nations of the world and 9 world cup years between 1978 and 2010
- A talented player is a player with at least 3 appearances in his national team during a world cup year
- Focus on EU-to-EU and All-to-EU migration

► Data sources:

- Location of talents (N_{ijt}): Benjamin Stark-Zimmermann and CIES Football Observatory
- EU leagues' performance (q_{jt}): UEFA website [1978-2010]
- National teams' performance (Q_{it}): FIFA website [1994-2010]
- Distances (CEPII) and GDP per capita (Penn World)

Key trends

- ▶ Inequality across leagues
 - ▶ Lorenz curve: top leagues improved, bottom leagues deteriorated after 1994
 - ▶ Theil/Gini: decreased before 1998, increased since then
- ▶ Concentration of talents
 - ▶ Increased number of talents in EU leagues, increased proportion on non-EU players
 - ▶ Herfindhal: Increased concentration after 1994
 - ▶ Increased production of talents in poor regions
- ▶ Intradistribution mobility matrices
 - ▶ Leagues' mobility in ranking correlated with net immigration
 - ▶ Very strong correlation after 1994
- ▶ What is due to Bosman ruling?

General structure

- ▶ My objective is to assess the effect of Bosman rule on inequality, quality, production of talents in football
- ▶ Model with three interdependent technologies:
 - ▶ Endogenous bilateral migration decisions
 - ▶ Endogenous leagues' performance (and national teams' performance: by-product of the model)
 - ▶ Endogenous production of talents
- ▶ Technologies are microfounded, and structural elasticities are empirically estimated

Equations

- Migration Equation:

$$\ln \frac{N_{ijt}}{N_{iit}} = \theta \ln \frac{w_{jt}}{w_{it}} + \delta \ln \frac{q_{jt}}{q_{it}} + \lambda \cdot BOS_t$$

$$+ \beta_1 \ln d_{ij} + \beta_2 l_{ij} + \beta_3 s_{ij} + \alpha_i^m + \alpha_j^m + \alpha^m(t) + \epsilon_{i,t}^m$$

- Leagues's and National team's technologies:

$$\ln q_{jt} = \alpha_j^q + \alpha_t^q + \gamma \ln l_{jt} + \epsilon_{jt}^q$$

$$\ln Q_{jt} = \alpha_j^Q + \alpha_t^Q + \phi \ln L_{jt} + \epsilon_{jt}^Q$$

where (α_j^q, α_t^q) and (α_j^Q, α_t^Q) are the vectors of fixed effects, ϵ_{jt}^q and ϵ_{jt}^Q are the error terms.

Falsification Exercise

- ▶ Was the Bosman rule an expected shock?
- ▶ Do I really capture the effect of Bosman rule?

Answer:

- ▶ I generate a number of fake Bosman dummies: 1986, 1990 and 1994.
- ▶ Bosman effect is really captured and it was an unexpected shock.

Training

Now, I endogenize training.

Empirical specification:

$$\Delta \ln N_{it}^T = \alpha_i^N + \alpha_t^N + \beta_0 \ln N_{it-1}^T + \sum_r \varphi_r BOS_t d_{ir} + \epsilon_{it}^N$$

Estimation methods: OLS, IV, System GMM

The value of φ_r is :

- ▶ Africa=SA=1.05
- ▶ CA=1.68
- ▶ Others=0

Inequality and efficiency impacts

- ▶ For EU leagues:
 1. Inequality: +24% in 1998 and +32% in 2010 (rapid change)
 2. Efficiency in terms of score: +5% in 1998 and +11% in 2010 (progressive change)
 3. Efficiency in terms of number of talents: +24.2% in 1998 and +36% in 2010

- ▶ For all national teams:
 1. Inequality :-41% in 1998 and -42% in 2010
 2. Efficiency in terms of score: +14% in 1998 and +20% in 2010
 3. Efficiency in terms of skills: +42% in 1998 and +71% in 2010

Potential finalists of the World Cup

Years	FIFA	No-Bosman counterfactual
1998	France and Brazil	Brazil and Argentina
2002	Brazil and Germany	Brazil and Argentina
2006	Italy and France	Argentina and England
2010	Spain and Netherlands	Spain and Brazil

Without Bosman, Latin America would be stronger

A variant with exogenous number of talents

I simulated my model with exogenous path for N_{it}^T (i.e. no brain gain mechanism)

- ▶ I obtain similar results for ranking and inequality: changes in inequality are due to greater concentration of talented players
- ▶ I obtain much lower variations in efficiency: changes in global efficiency are mainly driven by brain gain-type mechanisms

Conclusion

- ▶ My analysis reveals that Bosman rule has
 - ▶ rapidly increased inequality between leagues
 - ▶ progressively spurred production of talents in poor regions
 - ▶ progressively increased global quality of football
- ▶ Increasingly selective immigration policy might generate similar effects on the world economy
- ▶ The model can be used to predict the future or simulate shocks (e.g. wage cuts in indebted countries, investment in training centers, protectionist measures towards non-EU players, etc.)