

FACTS AND MYTHS ABOUT GENDER IN CHESS

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Outline

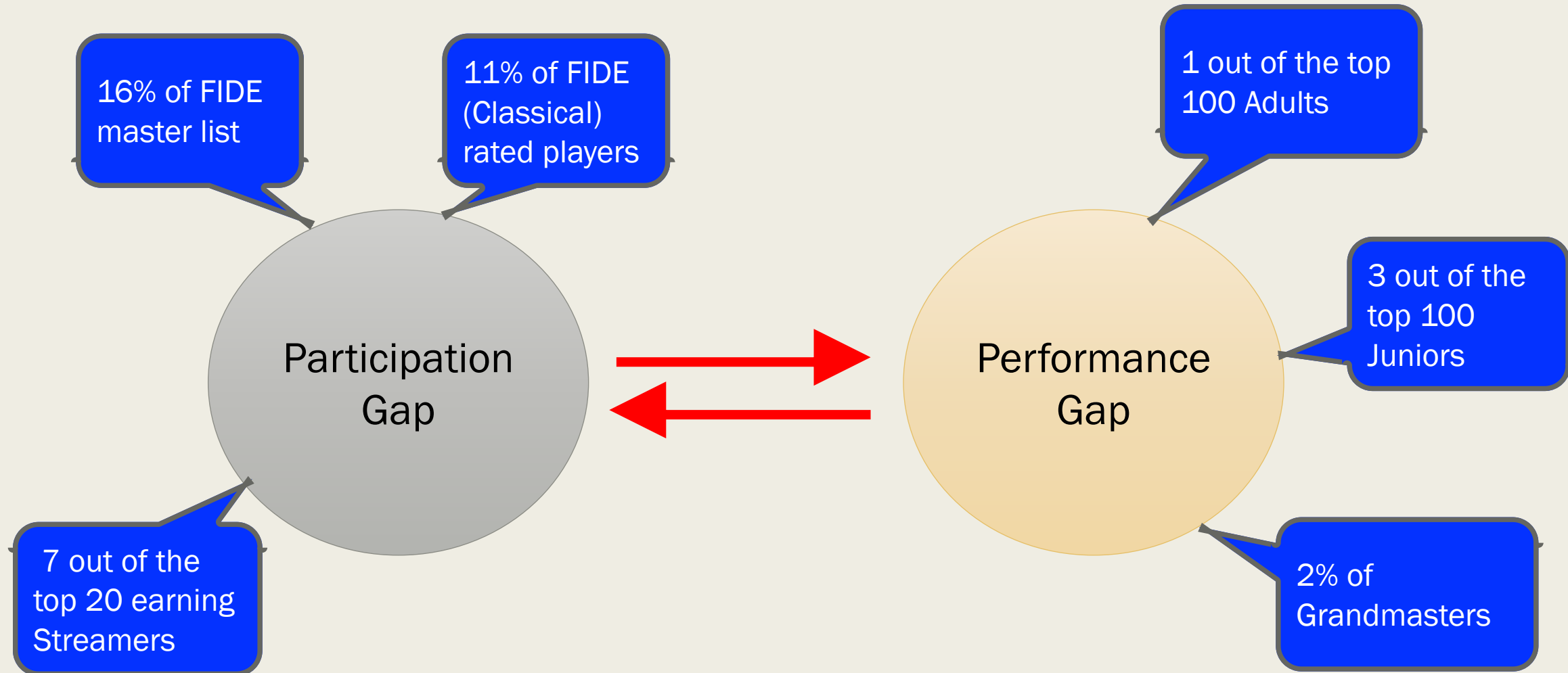
What do we know about:

1. the gender gap in chess?
 - a. Participation*
 - b. Social factors*
 - c. Biological factors*
2. gender policies that work?

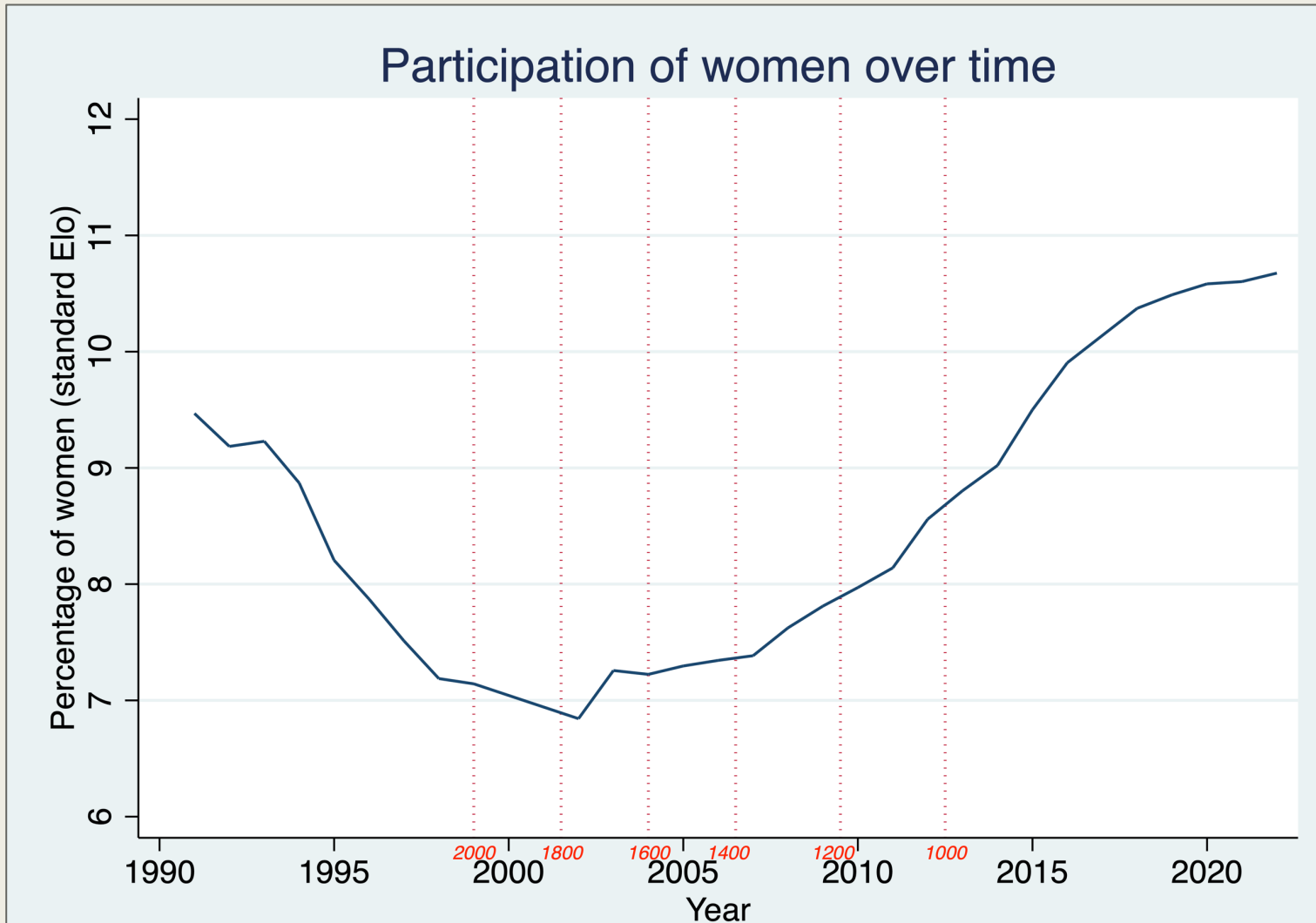
A 3D illustration of a chessboard with a checkered pattern. The pieces are represented by male and female symbols. In the foreground, several male symbols (a circle with an arrow) are positioned on the board. In the background, a row of female symbols (a circle with a cross) is visible. The text "1. THE GENDER GAP" is overlaid in the center in a white, sans-serif font.

1. THE GENDER GAP

Gender Gap: Women make up...



Are things improving?



...yes, but
very slowly.

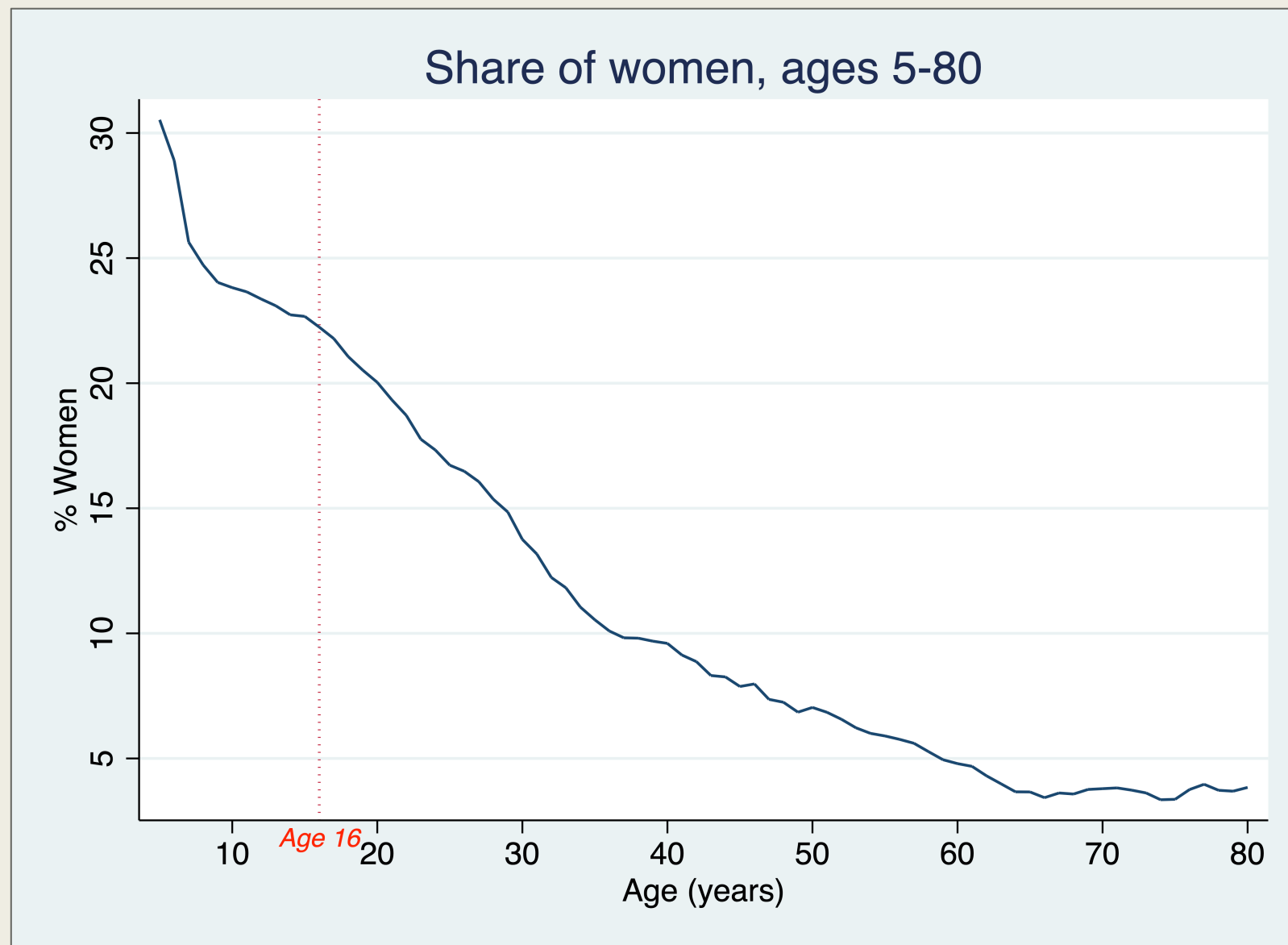
What we know about the gender gap in chess

1. **Participation:** Explains most, but not all, of the performance gap

Strong evidence that:

- Girls drop out at faster rates than boys at all ages
- The drop-out is especially severe after age 16

Drop-out rates by age



What we know about the gender gap in chess

2. Social factors negatively affect women's performance

Surprisingly strong evidence of stereotypes affecting performance in chess.

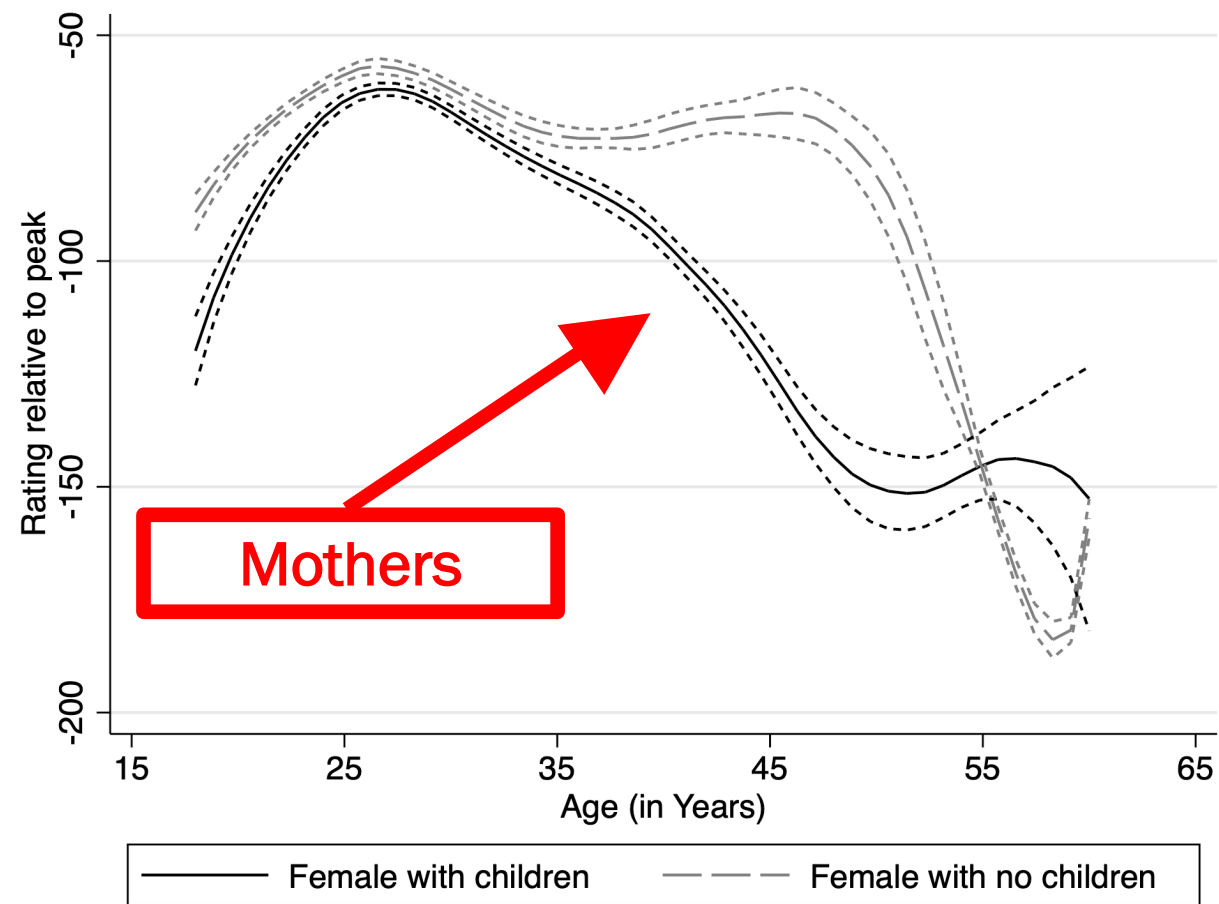
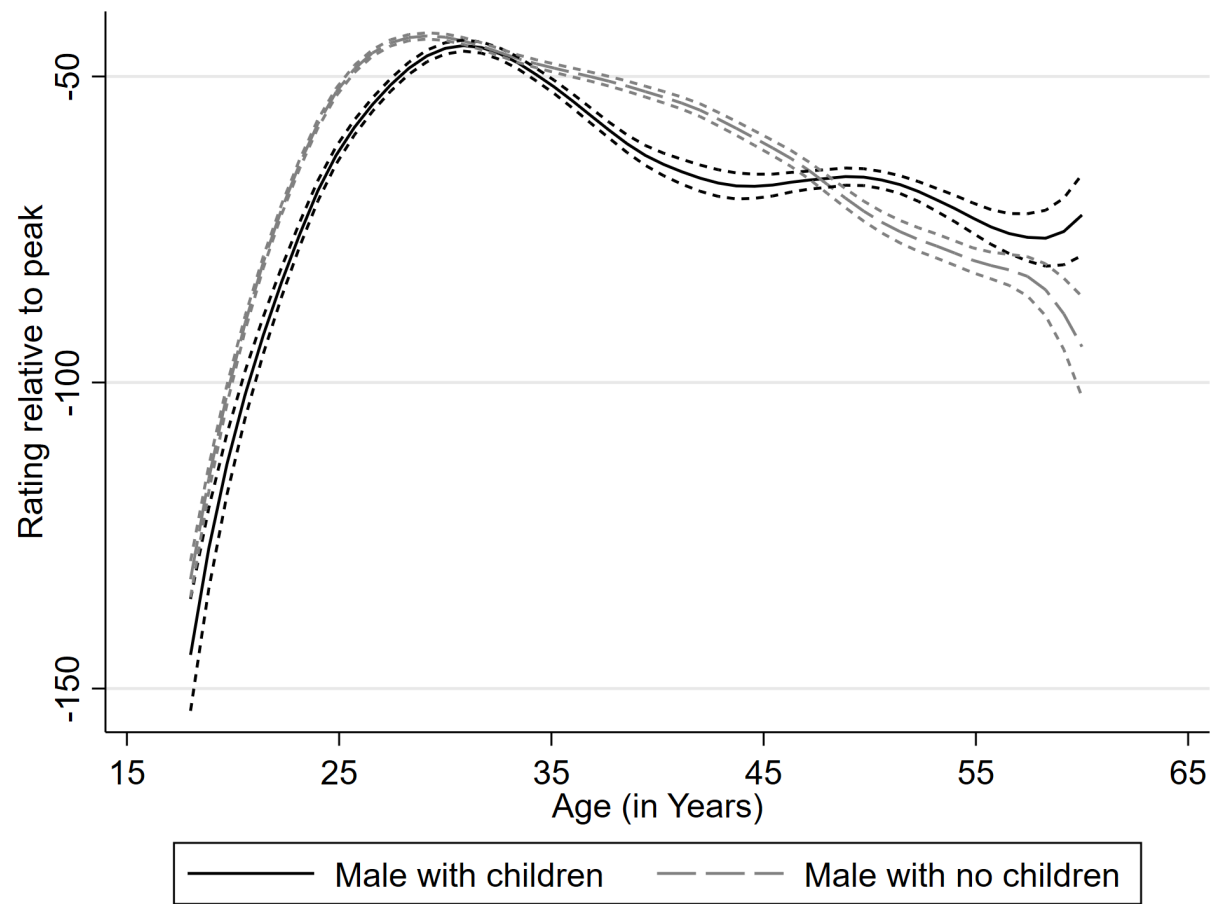
- Multiple studies have found that women chess players play worse against men than against other women
- Some evidence that men modify their playing style when facing a women
 - *Men take longer to resign against women*
 - *Men play riskier openings against attractive females*

What we know about the gender gap in chess

3. Some evidence **biological factors** affect the gap, but we don't know exactly what, or how much

Women and men exhibit a similar life-cycle of chess strength, *except for* women who have children.

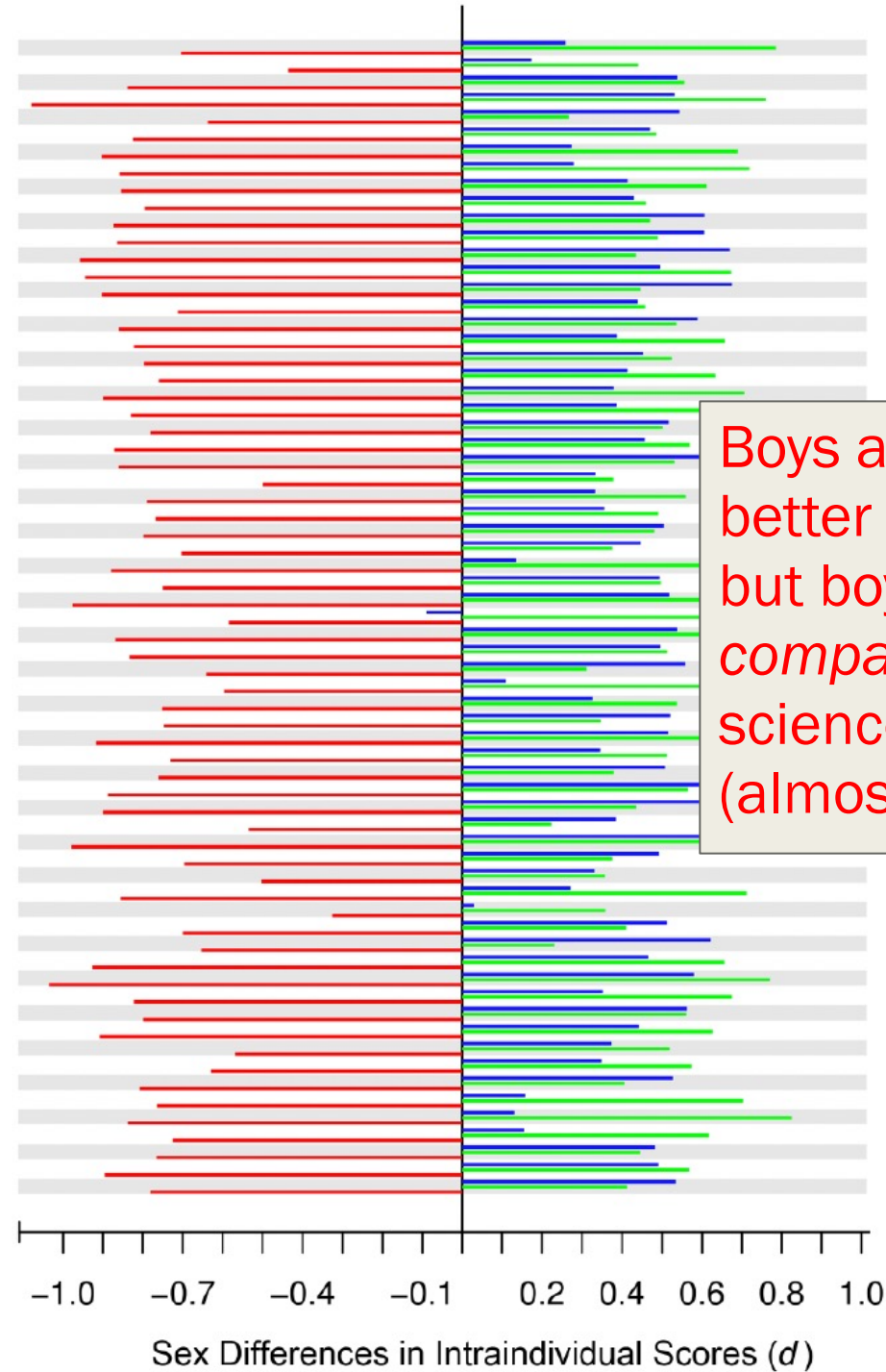
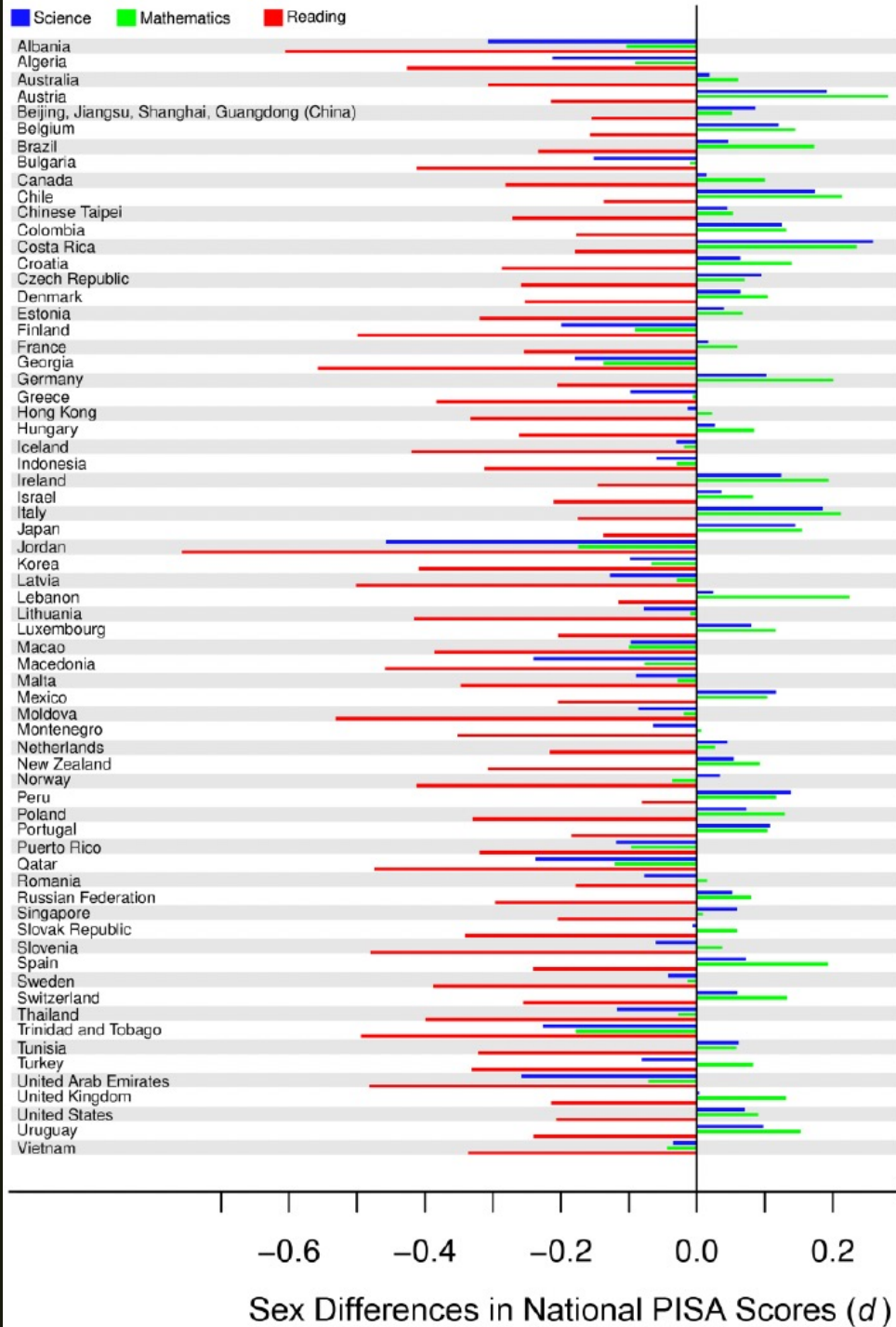
- Biological factor or social factor?



What we know about gender and *biology outside* of chess:

Biological factors: Loads of evidence of gender differences (but not about intelligence).
What we know from outside of chess that could plausibly affect chess performance/participation:

- a) *Competitiveness*
- b) *Preferences*
- c) *Comparative advantage* (e.g. STEM skills vs reading/writing/speaking skills)



Boys are not *absolutely* better in science/math, but boys are *comparatively better* at science/math in (almost) every country.

What we don't know:

- We don't know whether or how biological differences in the population work in **chess**
- For example, the minority of female classical rated players are likely on the extreme end for competitiveness, preferences and comparative advantage

How much should we really care about the gender gap debate?

- Gender gap in chess is very interesting to academics
- Not clear (to me) that it is useful to make it the centre of the conversation in chess
- E.g. imagine that the ‘natural’ participation rate is 25%. What changes for policy?
- Suggest shifting the focus to a clear goal of boosting female participation and reducing drop-out, and conversations about
 - *What works?*
 - *What doesn’t?*
 - *What evidence do we need to make good decisions (and how can we get it)?*

A 3D illustration of a chessboard with alternating light and dark squares. The pieces are represented by male and female symbols. In the background, a row of female symbols (a circle with a cross) stands on the back rank. In the foreground, several male symbols (a circle with an arrow) are scattered across the board, some standing and some lying on their sides. The text "2. GENDER POLICIES" is centered in the middle of the board.

2. GENDER POLICIES

Policies

1. Role Models and Peer Effects
2. Quotas
3. Indices

Role models

Strong evidence that role models matter for minorities in competitive environments:

- Ugandan girls who watched *Queen of Katwe* before their math exams were 44% more likely to pass.
 - *This closed the gender gap in math test scores*
 - *Boys also did better!*
- Early-career women with female mentors stay longer, do better in their careers
- Indian politicians: Having a female leader means girls are more likely to pursue politics, delay marriage/children
- Boys with male English teachers do much better in reading/writing

Role models in chess

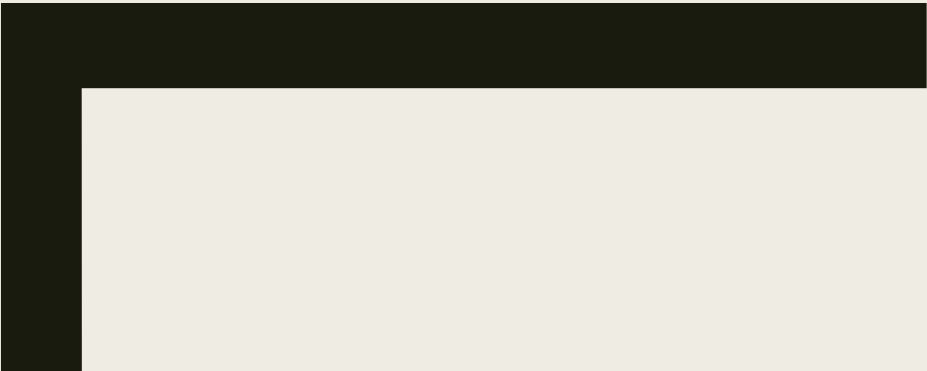
- Not just top players
- Trainers (at all levels), administrators, arbiters, organisers, commentators, streamers

Peer effects

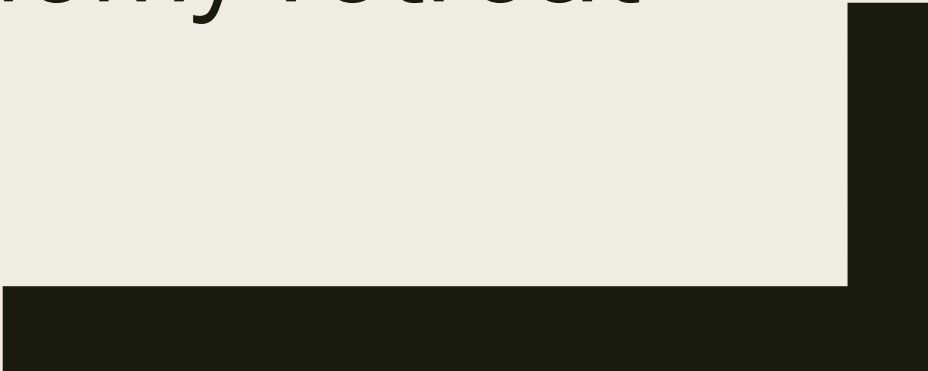
- In men-dominated environments, having more women peers significantly helps women
 - *West Point military academy: one extra women peer cuts the gender gap in promotions by 50%*
 - *High-school girls with high-performing female peers in mathematics are more likely to choose a science track*
 - *STEM PhD programs: Women without female peers are more likely to drop out and less likely to graduate than those with female peers*
- Surveys* of female chess players: having to train alone, pressure to represent all female players, lack of social/friendship group → disincentives to continue

*(Barbier 2020, Smerdon 2021)





Recommendation #1:
Annual FIDE girls academy retreat



What do we know about quotas?

- Evidence on gender quotas is mixed. Sometimes they work, sometimes they do nothing, and sometimes (but rarely) they can even backfire
- General rule:
 - If there is a **Pipeline Problem** – e.g. low numbers of girls playing chess at all ages – then quotas probably won't work
 - If **stereotypes** or other factors unrelated to performance are causing girls to drop out at higher rates, then quotas are probably a good idea



Quotas in France

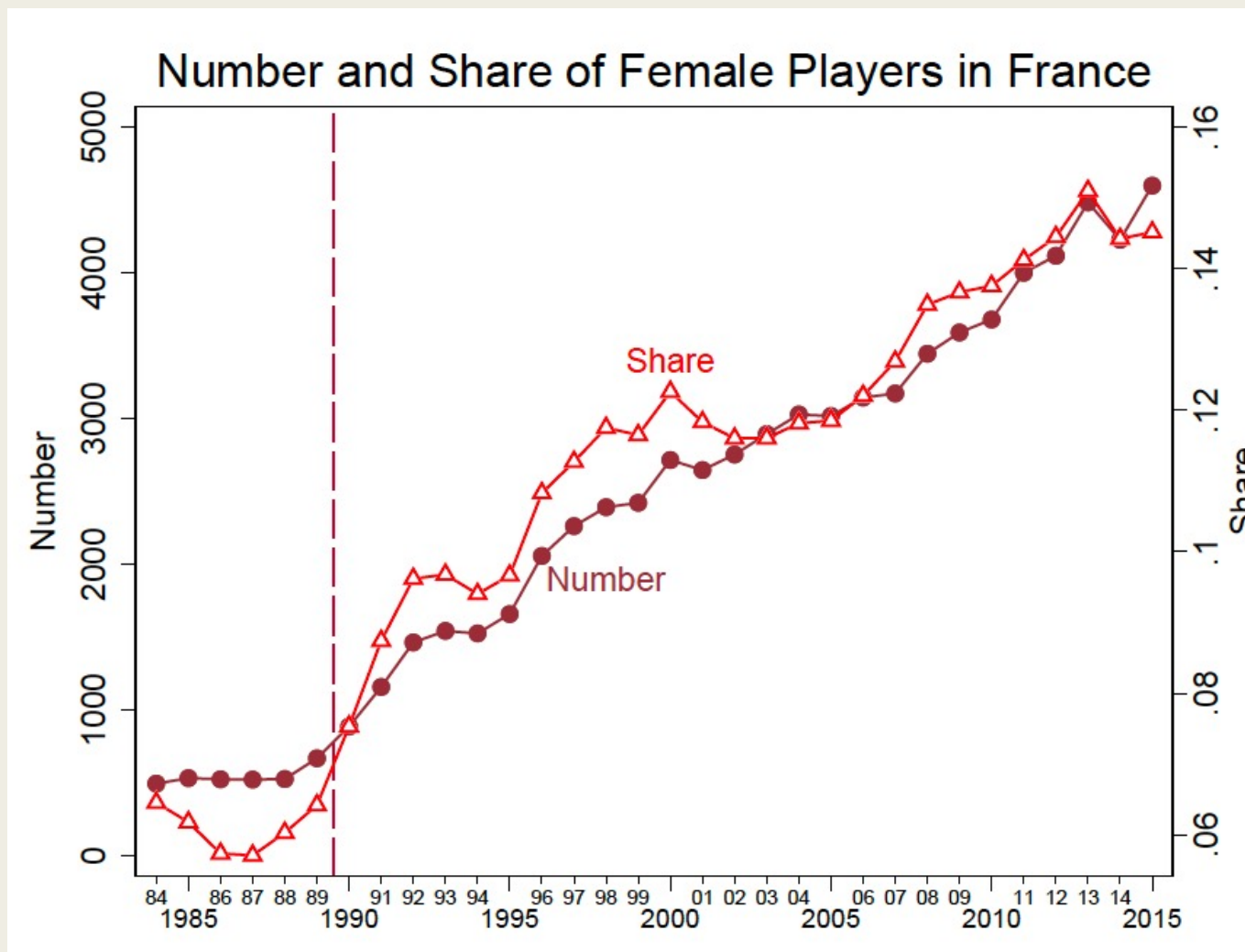
Evidence from chess suggests quotas might work. How to test it?

De Sousa (Université Paris-Saclay) and Niederle (Stanford) analysed the French experiment:

- In 1990: Two-day meeting of French Chess Federation about **quotas**
- **Decision:** Every Division 1 club had to bring 9 players and at least one had to be a (French) female player.
- Division 2 in 1991, Division 3 in 1992.

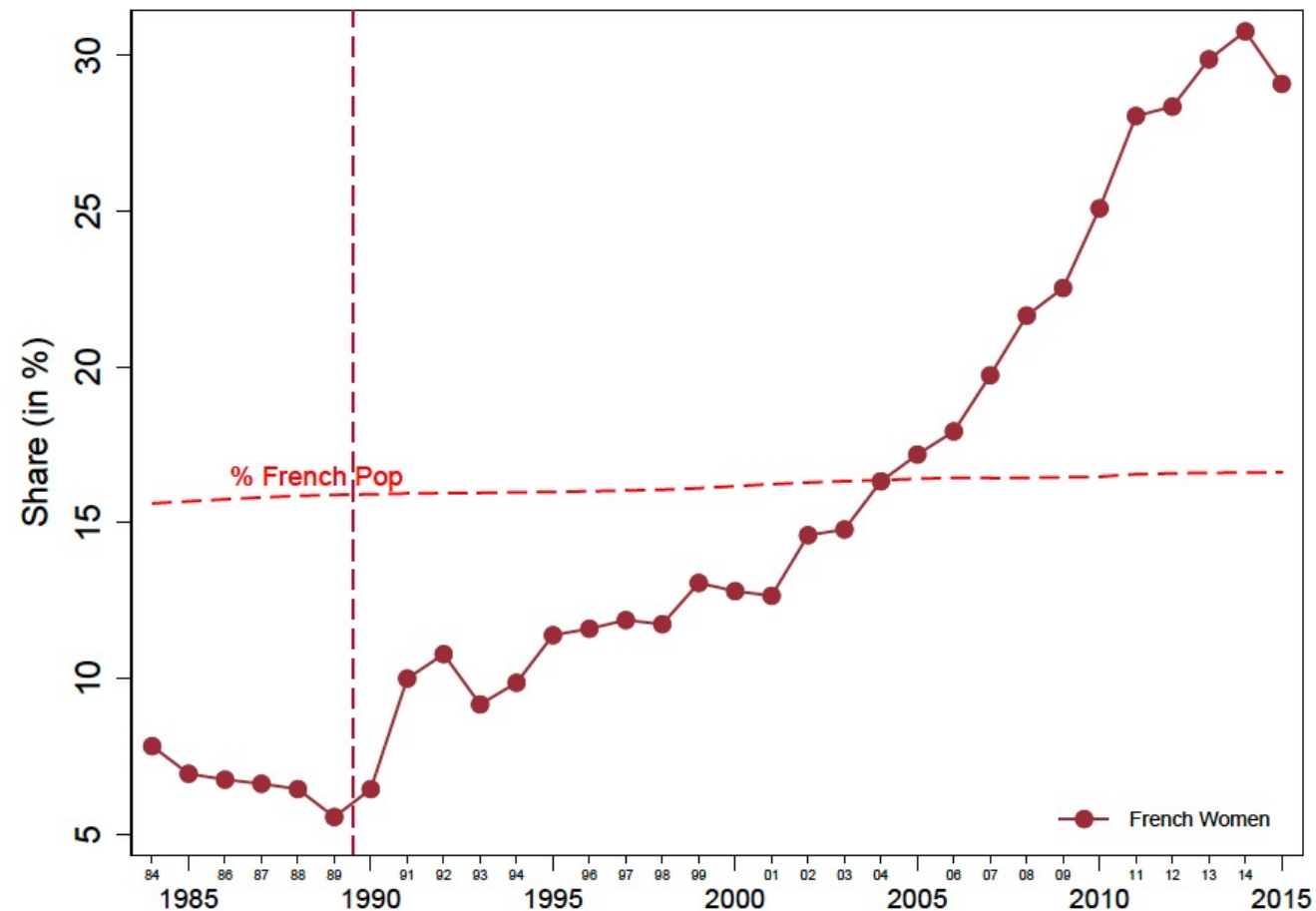
Effect of the Quota *in* France

- Dramatic increase in Elo of the Top 12 women
- Closing of the gender gap in Elo for top players
- Large increase in number and share of female players (*Trickle-Down Effect*)



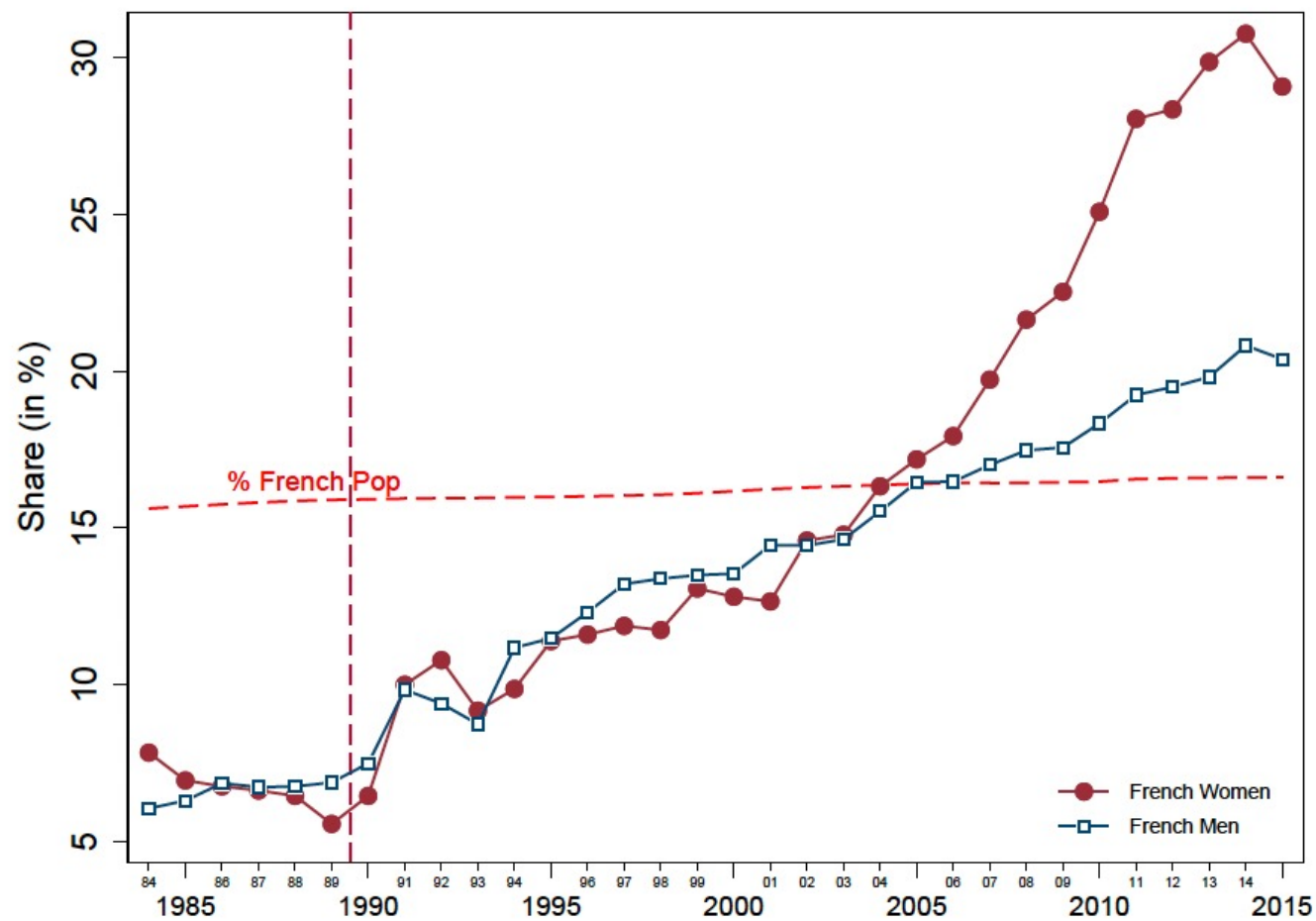
Effect of the Quota *for* France

- Women in the EU: France now doing much better (per its population) than before the quota



Effect of the Quota *for* France

- Are men hurt by the quota?
- ...NO



Recommendation #2:

Federations to introduce 'gentle' quotas for league competitions

Country performance indicators

Many cross-country indices used around the world, e.g.

- Human Development Index (UN)
- Gender Inequality Index (UN)
- Corruption Perceptions Index (Transparency International)
- World Happiness Report (UN)
- Happy Planet Index
- Democracy Index (The Economist)
- Where-to-be-born Index (The Economist)
- Social Progress Index
- Gini (Inequality) Index (World Bank)

Why an index?

Public, cross-country rankings:

- draw more attention to issues within a country
- provokes global conversations
- holds responsible parties to account by measuring progress (or lack of)
- empowers relevant non-government organisations and individuals within a country

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The Fighting Chess Index

Introduction

The Fighting Chess Index (FCI) is a composite, weighted measure of the combativeness of top chess players. It combines data about the frequency, length and colour of drawn games from 2015-2020 to provide a single score for each individual that can be used to compare the degree of 'fighting chess' among players. This article introduces the FCI and the basic methodology, provides current rankings FAQs, and a technical note with details for replication.

An early caveat: all indices are controversial, to varying degrees. It's important to note that I have used **standard and widely accepted methods** to create the index, with as few of my own subjective decisions in the input as possible. I have highlighted where I have made these assumptions and why.

APRIL 29, 2019 / CHESS

The Best (And Worst) Countries to Be a Female Chess Player

Summary: Female Participation rates are higher in countries that are traditionally patriarchal. Various theories are discussed. Federations seeking to boost female participation should concentrate on teaching chess to girls in or before primary school, as well as encouraging young adult women to stay in the chess world.

Here's a quiz for you. Try to guess which of these countries have the highest percentage of female chess players:

- Brazil, China, Denmark, France, Germany, India, Indonesia, Iran, Kenya, Mexico, Netherlands, South Africa, Sweden, United Kingdom, USA, Vietnam

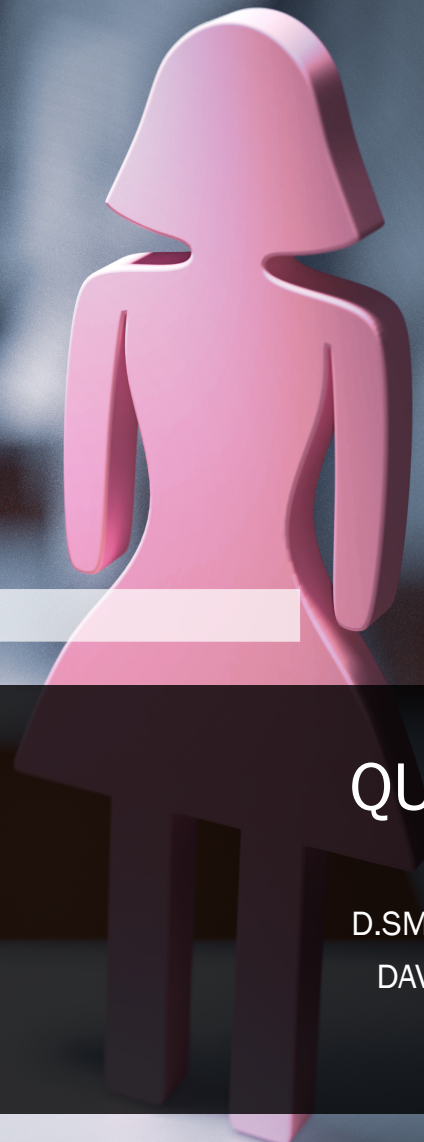
Recommendation #3:

FIDE 'Women in Chess' Index

Components: Participation in rating lists, board members, arbiters, trainers,

Summary of recommendations:

- Sponsor an annual FIDE retreat for talented girls, featuring role-models
- Consider introducing a 'gentle' quota into national leagues
- Develop and publish an annual *Women in Chess* Federation ranking



QUESTIONS?

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