Gender empowerment and proactive economic rationality

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Summary of the study:

- We observe a dramatic change in women's labour participation in Spain, in our preliminary look at the macro data.

- The change had already started from a cohort which was restrained by the dictatorship.

- Theoretical frameworks such as “statistical discrimination”, which is a static concept, fail to explain this phenomenon.

- Our analysis helps us to understand women’s self-improving investments, in the formative stages of their lives, which might have started before democratic reforms delivered bountiful equal opportunities to women.

Summary of the analysis:

We made clear the heterogeneity among Spanish women's birth cohorts, using panel data.

- The behavioral pattern, in terms of labour participation, was different among cohorts.
- We observed a gradual change in labour participation patterns from counter-cyclical to pro-cyclical.
- In the cohort which (must have) spent most of their formative years prior to the fall of Franco, the change to pro-cyclicality already can be observed.

Background

- Discrimination, being it gender, race, ethnicity, religion, language, socioeconomic class, or whatever else, is such a fascinating research question.

- Why do people bother to discriminate at all?
- Where are the incentives to discriminate along the gender line?

- Is gender (discrimination) an institution ?
- Is it part of our leftover from hunter-gather past?
- Does gender discrimination, or its abolition, need to be exogenously superimposed, or not necessary ?
- Gender “theory” seems to attribute discrimination to “history.”

Statistical discrimination

Such an ingenious theory to circumnavigate the formidable question of where the discrimination comes from.

- Multiple equilibria :

  High expectation, higher effort.

  Low expectation, lower effort.

- There's no reason why different groups should choose the same or different equilibria.

- Could potentially be used to blame the victim.
- No explanation as how to the specific equilibrium has been selected.
- How can the transition from one equilibrium to the other happen ?
- Does it need to be initiated and/or enforced by some policy or external intervention, or can it be achieved at the grass-root level?
- Did policy or law enforcement “liberate” women, or did women liberate themselves ?

Transferable implication :

Is it the policy (supply) that induces the reform (demand), or is it the reform (demand) that elicits the policy (supply)?

Hint :

Without (or before) actually observing the society changing, how could law- and/or policymakers, who are most often chauvinists, possibly realise where the demand for the change is ?

- Ideally, we would like to find a suitable natural experiment whereby we can substantiate :

  that the reform did emerge at the grass-root level, and also why it could not have happened earlier.

- We examine the Spanish data.

Why Spain?

- Franco governed until as late as 1975.
- Institutionalised reform prior thereto had been circumstantially obviously difficult if not downright impossible.
- Nevertheless, evidence can be found that socioeconomic gender relations had already started to change.

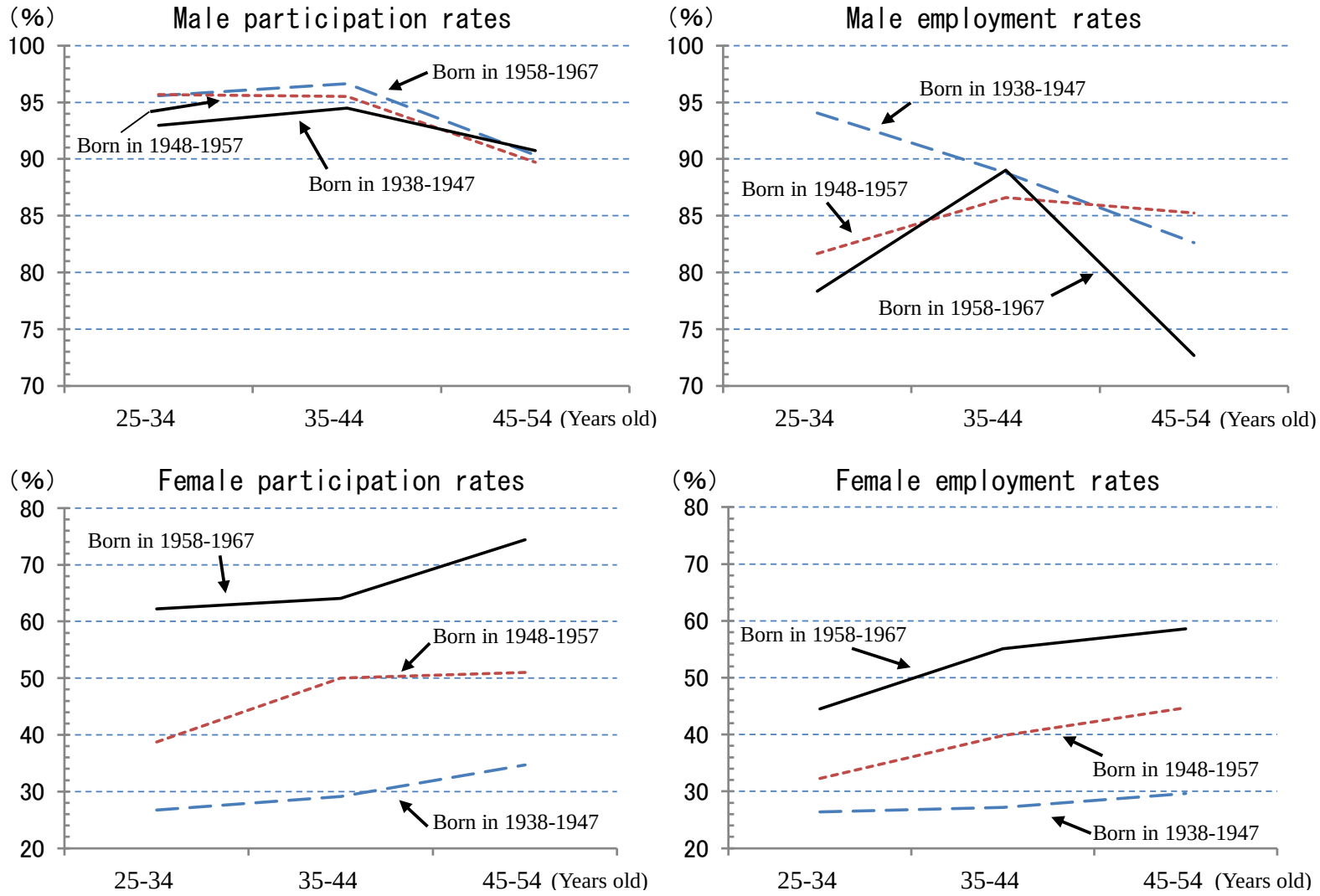


Chart 1: Age-progressions of labour participation and employment rates and their shifts by gender and 10-year birth cohorts.

Source: Online OECD Employment Database .

Preliminary look at macro data

- Women's labour participation

  born 1938 - 47 =⇒ low.

  born 1948 - 57 =⇒ medium.

  born 1958 - 67 =⇒ high.

- But those born 1948-57 (must have) lived most of their formative years prior to the fall of Franco.

⇒Their departure from the matronly tradition is not the result of institutional change.

In more detail...

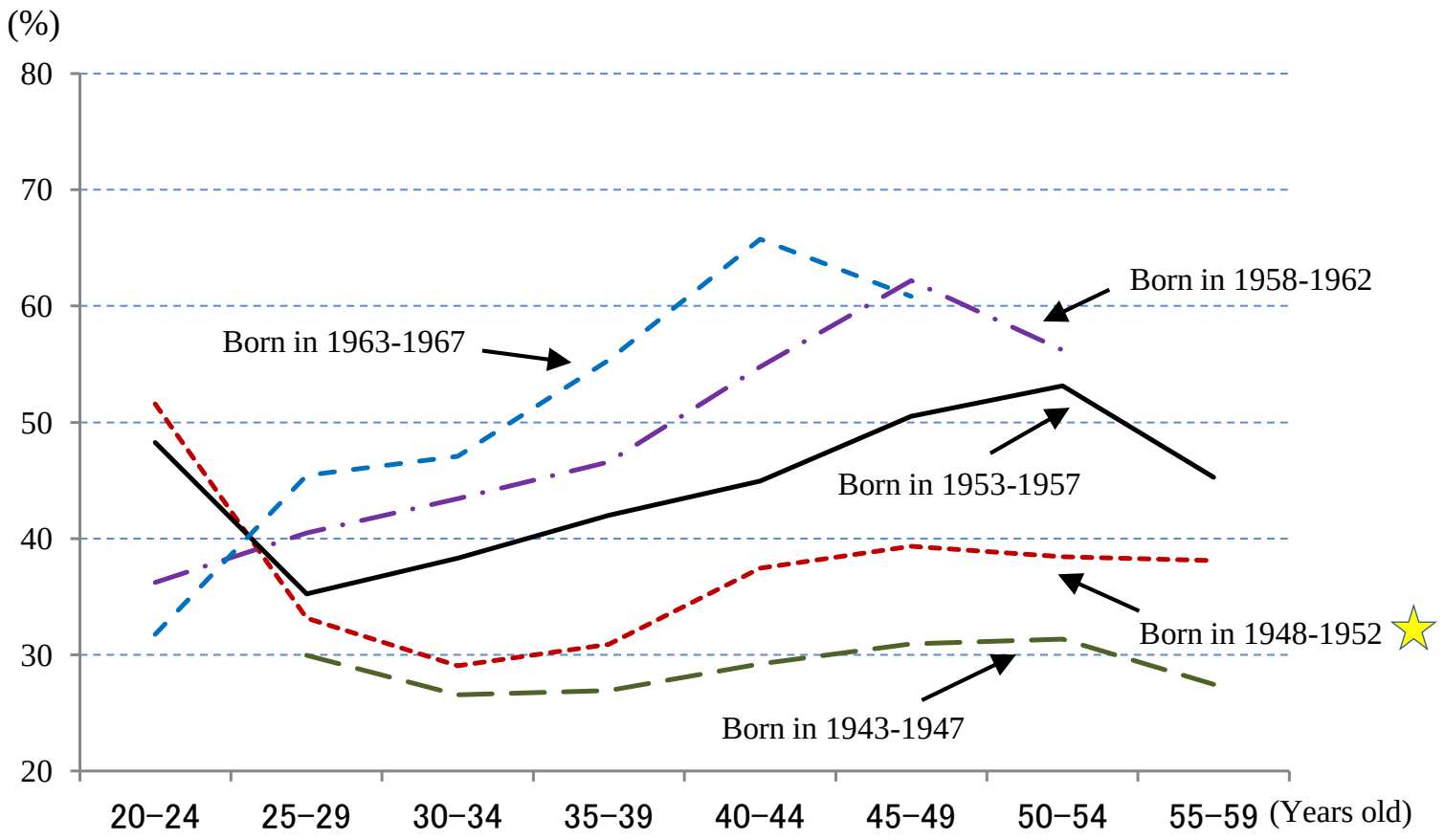


Chart 2: Age-progressions of women's employment rates and their shifts by 5-year birth cohorts.

Source: Online OECD Employment Database.

Our analysis

Now we will try to capture heterogeneity among women's cohorts, focusing on the labour participation pattern.

- Data: ECHP for Spain, 1994-2001

  European Community Household Panel for Spain organised by the European Union Statistical Office (EUROSTAT). Fifteen EU countries participated in the ECHP, wherein the Spanish part was undertaken by the Spanish Statistical Office.

- We utilise the Household, Personal, and Relationship files.

  ➔sample of couples with households' information.

  Then, we keep only those wives who can be observed in all waves (2,406 wives, 39.51% of all data) so as to construct balanced panel data.

- We needed to track each married woman's employment status. This is precisely why panel data was requisite.

- We use the fixed effects logistic model to focus on the 'footprints' of married women's labour participation.

- Our preliminary calculation using descriptive statistics, based upon the panel data, confirms an adequate *intra*-person variation.

- S.D.; intra-person= 0.232, inter-person= 0.382

(12,749 observations, 1,845 individuals, times 6.91 serial observations)

※ excluding wives over 60 years old, and those who are self- or family-employed.

Outcome Variable

- Wife： Not working=0, Working=1

Predictors and covariates

- Wife： birth cohorts and educational credentials.
- Husband： educational credentials, annual income, whether he does daily household cares, whether he is over 60 years old and his status in the labour market.
- Household： existence of debt and housing loan, ownership of residential house and second house, and the number of members under 16 years old in the household.
- Macro： regional unemployment rate.

Results

- We observed a gradual change in labour participation patterns. Only those born prior to 1944 tends to participate counter-cyclically (younger cohorts tends to be more pro-cyclical).

➔They must have had made a precommitted "human capital investment" NOT to work, i.e., not simply low education (both men and women in older cohorts were generally poorly educated).

Table : Fixed effects logistic estimation of married women's employment status.

	Dependent Variable:	Not Working=0, Working=1	
		(1)	(2)
Husband	Over 60 years old	−0.545 †	0.0757
		(0.2973)	(0.3394)
	Annual income	−0.0000000827	−0.0000000926
		(0.0000)	(0.0000)
	Daily care	0.395***	0.423***
		(0.1124)	(0.1138)
	Unemployed	−0.0479	0.0377
		(0.1503)	(0.1525)
	Long-term Unemployment	−0.277	−0.255
		(0.2774)	(0.2809)
Household	Debt	0.0115	0.00774
		(0.0954)	(0.0960)
	Own house	0.417*	0.366 †
		(0.1943)	(0.1954)
	Second house	−0.0383	−0.0561
		(0.1641)	(0.1653)
	Housing Loan	0.144	0.117
		(0.1298)	(0.1307)
	Members under 16 years old	−0.104	−0.149
		(0.0860)	(0.0945)
Macro	Unemployment rate	−0.0170	0.114*
		(0.0308)	(0.0476)
	Born in 1945−49 × Unemp. rate		−0.0654
			(0.0421)
	Born in 1950−54 × Unemp. rate		−0.0935*
			(0.0416)
	Born in 1955−59 × Unemp. rate		−0.158***
			(0.0411)
	Born in 1960−64 × Unemp. rate		−0.163***
			(0.0414)
	Born after 1965 × Unemp. rate		−0.144***
			(0.0411)
	Number of observations	3834	3834
	Number of individuals	518	518
	Log likelihood	−1405.54	−1391.28
	LR chi sq.	143.9	172.43

Notes:

1. † =p<0.10, * = p<0.05, ** = p<0.01, *** = p<0.001.
2. Standard errors in parentheses.
3. All the estimation models include year dummy variables for 1995-2001 which are not listed here.
4. The variables of cohorts and final education are included in the model but dropped in the fixed effects estimation.
5. Those wives over 60 years old, and those who are self- or family-employed are exclude.

- Note not just that these older cohort had lower reservation wages compared to the younger cohorts (presumably due to their generally poor educational qualifications, etc) which alone would :

  ①make them more labour-participatory than their successors ;

  ②not explain countercyclicality (b/c labour demand is cyclical in quantities as well).

Consideration

- The change in labour participation pattern seems to starts from those born 1945-49.
- By the time Franco passed away in 1975, they were already in their late 20s, long past their formative youth.
- Later, gender equality was constitutionalised in 1978 at long last.
- Now let's come back to our discussion of statistical discrimination:

  What separates those born 1945-49 from their foresisters ?

- Statistical discrimination is a static concept.
- In real labour markets / human capital, there can be substantial time lags betwixt : “effort” (e.g., education) in formative years, and “expectations” (e.g., by employers) after graduation.

- Do employers, for instance, form their expectations about new employees based upon: the employees’ previous generations? Or, the employers’ which they have inherited from their role models?

- From school girls’ (and also boys’) point of view, who are their future prospective employers, and what expectations can they have ?

- Whatever the real expectation formation processes might be, it seems sound to assume that the longer it takes, the better the expectations can be adjusted.
- Being in School from 6 years old, “graduate” at 12

  ⇒not enough time to influencing societal expectation
- All the way to the college degree at 22

  ⇒ society shall know in due time who these ladies are.

※Education had made some progress, Reform Act launched in 1971.

- However, presumably because of the advances of formal education, which served to give more time for expectation formation, girls in those timely cohorts wisely exploited much longed for opportunities. In doing so, they departure from statistical discrimination their foremothers used to suffer from for decades and generations.

Provisional conclusion

- Provisional story we'd like to tell :
- Being proactively 'economically rational', Spanish women born shortly after 1945 successfully seized opportunities which were not even explicitly given to them. As a result they defied statistical discrimination.
- On the other hand, we need not criticize their elder sisters born before 1944 for being irrational or less proactive. Opportunities simply weren't present.

- It’s misleading to suggest that these women should thank the policy for liberating them. The reality is, the women liberated themselves.
- AT LEAST we can safely say:

  Statistical gender discrimination had not been the fault of those discriminated-against women themselves.(Victim-blaming is definitely wrong.)
- Given less-than-half an opportunity, these determined young women were eager enough to escape from the lower expectations equilibrium.

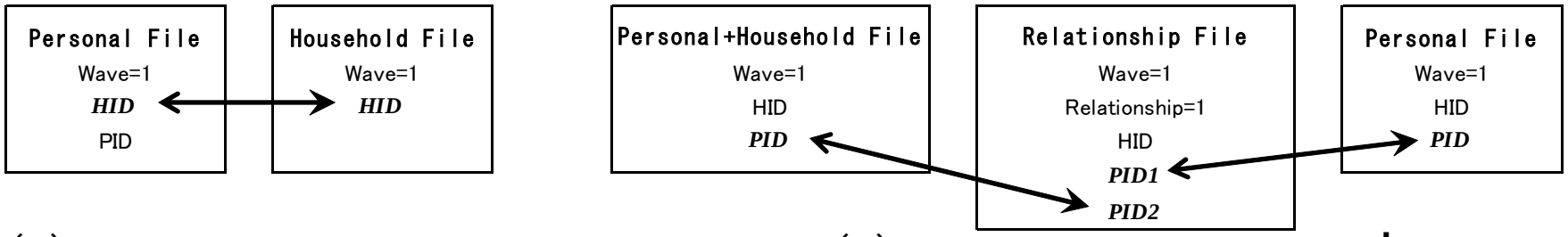
- Take-home :

  Similar stories can possibly be told on :

  other countries/regions/eras. other forms of discrimination such as race/religion/disability etc.
- other subjects such as development (how to depart from underdevelopment), demography, public policies...

Appendix: Data Description

- We use the Household, Personal and Relationship files to create the sample of couples with information of the household, in two steps, following EPUNet Team (2004: 8): first (1) merging households' information to Personal data (key variable: HID) and then (2) merging the other persons information to the data of the first step (key variable: PID).



（1）Merging Household file to Personal file　　（2）Merging other person to (1)'s data

- Before the second step (2), we select only those observations with value '1' that means "Marital relationship" in the Relationship file, so that we create the sample of couples with households' information. We collate the couples data of each wave (wide data), and then concatenate the files throughout all eight waves to create panel data (long data). The chart below (3) shows the description of panel data created, and we keep only those wives who can be observed in all waves (2,406 wives, 39.51% of all data) so as to construct balanced panel data.

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Thank you for your attention. Comments most welcome.

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"Gender empowerment and proactive economic rationality"

Keywords: Statistical discrimination, self-fulfilling prophecy, commitment, intertemporal consistency, human capital.

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【Extended Abstract】

Gender empowerment and proactive economic rationality

Rui Fukuda and Dan Sasaki (University of Tokyo)

Keywords: Statistical discrimination, self-fulfilling prophecy, commitment, intertemporal consistency, human capital.

1. Introduction

GENDER PARITY, like racial or religious equality, has traditionally been considered as an institutional advancement, largely prompted by progressive legal and societal provisions rather than by economically rational motives. In earlier times, pioneering movements for gender equality were based mostly upon constitutional arguments rather than economic productivity. However, as we all know both by experience and by literature, such a "passive" anti-discrimination doctrine proved inadequate in order to rid our troubled socioeconomy of lingering discrimination.

The argument of statistical discrimination shows the self-fulfilling prophecy of women's labour participation, or the *status quo* underdeveloped equilibrium, sustained by profit-maximising employers. It can be sustained as a rational expectations equilibrium, even when no-one harbours any non-economic hate against the underprivileged group.

According to this theory, however, all players are accomplices in perpetuating the discriminatory equilibrium. In this respect, the theory suffers from the essential importance of superimposed policy measures in order to eradicate discrimination, and neither sheds much light on the scope for the victims of discrimination to help themselves.

Here springs our research question: Has gender parity had to be superimposed by law and order, or has it been hard-earned by women themselves, only auxiliary assisted by legal provisions?

The key to our question can be found in the scope for long-term commitment. Namely, the aforesaid self-fulfilling prophecy takes sufficiently long, so that the initial expectors and the eventual fulfillers can belong to different generations. This means that, if a certain generation of school girls decide to start pre-investing in themselves in such ways that are both irreversible and also externally recognisable so as to outgrow their foremothers' olden tradition, their action can affect the expectations held by future, not present, employers.

2. Background and the case of Spain

The basic premise whereupon statistical discrimination stands is the multiplicity of equilibria. (See, amongst others, Arrow (1973), and Coate and Loury (1993).) For instance, if men are expected to work throughout their lifetimes whilst labour participation of women is expected to be cyclically fluctuant and thus sporadic, then economically rational employers will invest more in men than in women in terms of human capital and relation-specific skill development, so men will be paid accordingly more than equally innately able women. Given such differential treatments, economically rational male workers continue to remain in workforce throughout their lifetimes whilst comparably rational female workers find it worthwhile to work only intermittently when, and only when, they strongly wish to, either because their households are particularly needy or because the macroeconomy is so booming that their work will be paid too much to forgo.

Now, how can such a transition be initiated? This is our main research question in this paper. In order for those women who had previously been expected to develop a little human capital and thus

actually opted as expected, to outgrow the *status quo* underdeveloped equilibrium, the dual changes are requisite: the women themselves should start building up their own human capital on one hand, and the socioeconomy at large, including employers, should accordingly update their expectations about these women's human capital and resultant economic productivity.

In this paper we enlist Spanish data on women's labour participation. We focus on Spain because, firstly, on the institutional side, Spain is a country that has developed comparatively late: Franco governed until as late as 1975 (Marta-Guillén and Léon eds. (2011)). Institutionalised reform prior thereto had been circumstantially obviously difficult if not downright impossible. Second, nevertheless, evidence can be found that socioeconomic gender relations had already started to change. As is shown in Chart1, younger cohorts of women tend to indicate higher labour participation level, and it seems that the change had already started from a cohort which was restrained by the dictatorship(those born1947-1958). The key is that younger women are better educated on average than those old generations (Fuentes (2009)). Younger cohorts must have made their decisions to opt for higher education *before* much of the institutional development started.

This is precisely why we cite the Spanish data, which offers perfect chronology for our purpose. The story told by the data is invariably that a generation of enlightened women and their self-earned attainments called for institutional reforms thenceforward, not that any top-down institutional intervention woke them up.

3. Data and Method

Our main analysis is on the panel data set regarding labour participation of married women in Spain, from the *European Community Household Panel for Spain* organised by the European Union Statistical Office (EUROSTAT). The details on data collection and collation, conducted by National Data Collection Units, the international statistical authority collaborated across eight EU countries including Spain, can be referred to Paracchi (2002) and EPUNet Team (2004).

To take into account the possibility that women's labour participation may result from their household decisions, we utilise the Household, Personal, and Relationship files, and create the sample of couples with households' information. To preserve homogeneity of the sample, we keep only those wives who can be observed in all waves. Also, we exclude those wives over 60 years old, and those who are self-or family-employed.

We focus on the footprints of married women's labour participation in relation to macroeconomic cyclicality, controlling for their household characteristics. So we adopt nonlinear panel model for the outcome variable of employment status of married women. Since we are interested in *within*-person variation, in this paper we use fixed effects logistic (conditional logistic) estimation, which applies conditional maximum likelihood to the estimation model (Chamberlain 1980, Allison 2009). We do enlist interaction variables between birth cohorts (time-invariant variables) and the regional unemployment rate (a time-variant variable), to shed light on the heterogeneity across cohorts in their sensitivity towards the business cycle. The descriptive statics of variables used are listed in Table1.

4. Econometric results

The results of estimation are in Table2. The simple model (1) without cohort-interaction variables finds no significant effect of the unemployment rate upon individuals' labour supply. This is because different behavioral patterns exhibited by different cohorts are averaged out. Model (2), however, reveals the heterogeneous causal effects of the unemployment rate on the respective cohorts. We observed a gradual change in labour participation patterns from counter-cyclical to pro-cyclical.

Interestingly, labour supply by the oldest batch, born before 1944, is only found to be correlated *counter*-, not pro-, cyclical to the change of regional unemployment.

The countercyclical labour supply is precautionary, when and only when their household finance appears to be at risk. In other words, these older women's countercyclical workforce participation has had comparatively a little to do with their earning potentials which reflect their own economic productivity and human capital. Hence observationally, it appears that those who had invested in their own human capital, that is those women in younger cohorts in our context, tend to work throughout whilst those who had invested less, the oldest cohort in our data, tend to work only precautionary and thus intermittently. In this sense, human capital investment in one's formative youth has indeed been proven to serve as a commitment device for lifelong labour participation.

Women born from 1945 to 1949 seems already differ from those born before 1944. These women were already 26 to 30 years old by the time of the aforesaid Spanish democratisation in 1975, and 21 to 25 when the educational reform was launched in 1970. This implies that these women had already completed the formative stages of their lives before democratic reforms delivered bountiful equal opportunities. In other words, the enlightenment of these women predated democratic, gender-egalitarian institutions.

5. Provisional conclusion and Implications

We observe (a) that younger cohorts of Spanish women have followed distinct footprints in their labour force participation from their elder foresisters, and (b) that the change had already started in that generation whose formative years predated the democratic regime shift in Spain which took place as late as in 1970s. The combination of these two observations implies that the generation of women who initiated the change had made some forms of precommitment which affected the courses of their later lives.

The important element here is that, as we have seen from the data, the precommitment affected the entire life courses of these women, suggestive that the precommitment had been made in their formative years, which had predated major socioeconomic changes in the country.

However, we hardly intend to deny the importance or the relevance of policy. In other words, there may have been inexpensive policy measures which may not prominently appear on, say, public expenditure data, but may still have had symbolic impacts which directed both these women and the society at large toward positive changes. We are simply to claim that these women had started to help themselves long before any massive, visible political or institutional reforms allegedly helped them.

The implication is that in most other developed countries, political and institutional developments have been comparatively gradual and incremental, so it might not be obvious for us researchers to discern whether the women led the regime or *vice versa*. We believe hereby that our observations from the Spanish data offer transferable implications to other medium- to late-developed countries and economies, wherein women have presumably earned their own way through towards socioeconomic parity rather than pulled up by top-down policy interventions. There remains a scope in which we may be able to adopt an analogous line of argument to other forms of discrimination than gender. Whoever the discriminated-against groups may be, our provisional message is that the policy designers should first watch out for the self-help efforts exerted by the oppressed, and then design the policy accordingly, rather than imposing a ready-made policy to expect the oppressed to follow it blindly and passively.

Charts and Tables

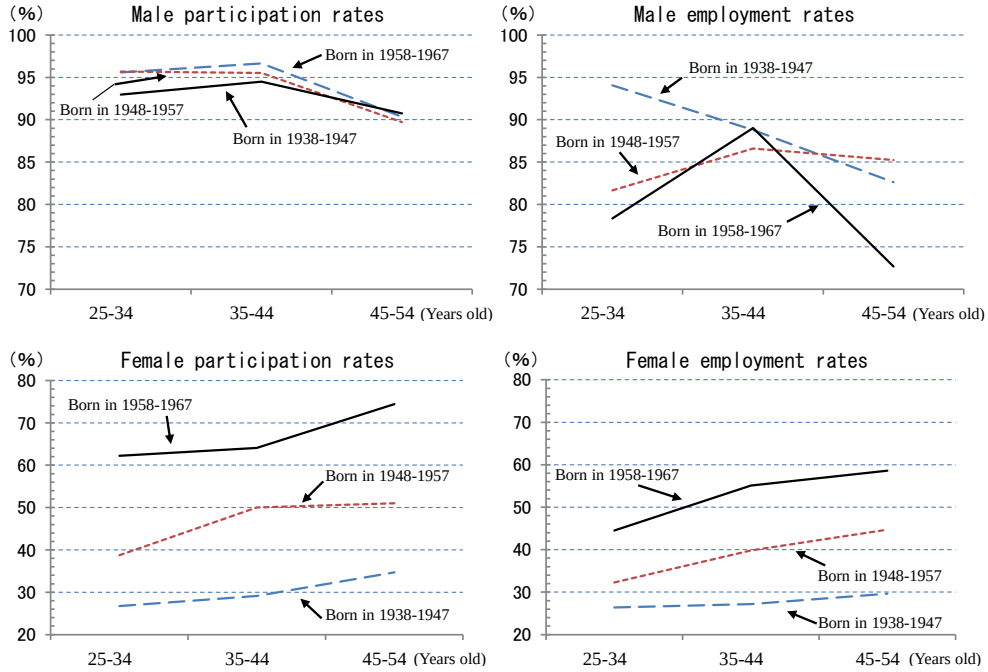

Chart 1: Age-progressions of labour participation and employment rates and their shifts by birth cohorts.

Source: Online OECD Employment Database.

Table 1: Descriptive statistics.

			(Observations=3,834)			
			Mean	**S. D.**	**Min.**	**Max.**
Wife	Dependent Variable: Working		0.384	0.486	0	1
	Cohorts	*Born before 1944*	0.106	0.307	0	1
		Born in 1945-1949	0.116	0.320	0	1
		Born in 1950-1954	0.174	0.379	0	1
		Born in 1955-1959	0.192	0.394	0	1
		Born in 1960-1964	0.202	0.401	0	1
		Born after 1965	0.210	0.408	0	1
	Final education	*Primary*	0.526	0.499	0	1
		Lower secondary	0.318	0.466	0	1
		Upper secondary	0.101	0.301	0	1
		Junior college	0.034	0.182	0	1
		Full University and above	0.021	0.144	0	1
Husband	Over 60 years old		0.054	0.226	0	1
	Final education	*Primary*	0.513	0.500	0	1
		Lower secondary	0.289	0.453	0	1
		Upper secondary	0.121	0.326	0	1
		Junior college	0.037	0.188	0	1
		Full University and above	0.040	0.197	0	1
	Annual income		1734712	1060302	0	6248827
	Daily care		0.263	0.440	0	1
	Unemployed		0.202	0.401	0	1
	Long-term Unemployment		0.271	0.445	0	1
Household	Debt		0.288	0.453	0	1
	Own house		0.812	0.391	0	1
	Second house		0.140	0.347	0	1
	Housing Loan		0.290	0.454	0	1
	Members under 16 years old		1.064	0.973	0	5
Macro	Regional unemployment rate		18.557	7.035	4.54	34.59

Note: Variables in *italic* do not change over the time of observation and are not estimated in the fixed effects logistic estimation

Table 2: Fixed effects logistic estimation of married women's employment status.

	Dependent Variable:	Not Working=0, Working=1	
		(1)	(2)
Husband	Over 60 years old	−0.545 †	0.0757
		(0.2973)	(0.3394)
	Annual income	−0.0000000827	−0.0000000926
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