



Remittances Statistics: **First Meeting of the Luxembourg Group**

June 2006

The views expressed in this paper are those of the author(s) only, and the presence of them, or of links to them, on the IMF website does not imply that the IMF, its Executive Board, or its management endorses or shares the views expressed in the paper.

MIGRATION RELATED FLOWS IN THE SPANISH BALANCE OF PAYMENTS: PRACTICAL SHORTCOMINGS AND NEW ESTIMATION PROCEDURES

Patrocinio Tello

LUXEMBOURG GROUP ON REMITTANCES MEETING

Luxembourg
26-27 June 2006

BALANCE OF PAYMENTS DEPARTMENT

CONTENTS

Migration-related flows data recorded in the Balance of Payments: methodological (BPM5 and BPM6) and practical issues

Spanish Workers' remittances: recent evolution and estimation problems

The Workers' remittances debits in the Spanish BoP: new estimation procedure and revision of historical series

Main conclusions

MIGRATION RELATED FLOWS IN THE BoP: CURRENT DEFINITIONS (BPM5) (I)



Workers' remittances, Compensation of employees and Migrants' transfers

Chart 1: credits (% total credits BoP)

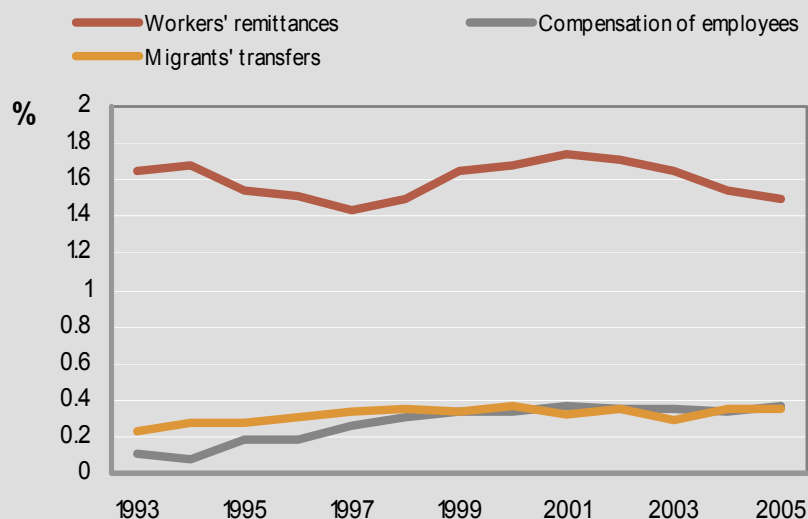


Chart 2: debits (% total debits BoP)

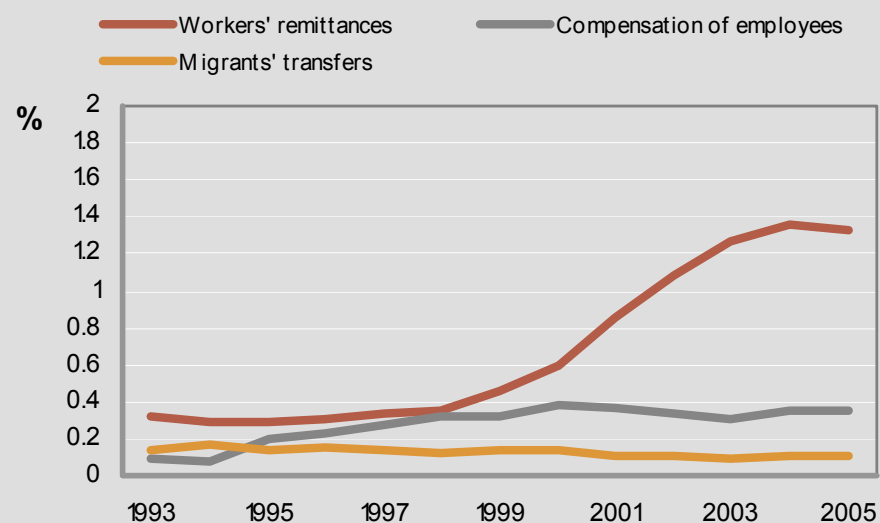


Table 1

BoP data (New data) Millions of euro	1993		1999		2005	
	Credits	Debits	Credits	Debits	Credits	Debits
Workers' remittances	1,484	293	3,110	910	4,298	4,614
Compensation of employees	90	88	632	653	1,056	1,234
Migrants' transfers	209	131	623	283	1,023	377

Source: Banco de España

MIGRATION RELATED FLOWS IN THE BOP: CURRENT DEFINITIONS (BPM5) (II)

Workers' remittances

Until 2006 this heading was estimated on the basis of the cross-border data reported by the Spanish resident bank (*ITRS*)

Underestimation of debits and overestimation of credits

Since 2006 several sources (e.g. *ITRS*, *Money Transfer Operators*,..) and econometrics methods are used

There is still an overestimation of credits

Compensation of employees

Until 2006 the Spanish BoP only recorded the portion of the compensation which was transferred to/from Spain by means of a resident bank; net term instead of gross term (*ITRS*)

Since 2006 new information provided by the National Statistics Institute has been incorporated into the estimation to record gross figures. The series has been revised from 1995 data onwards (*ITRS+NSI*)

The new figures are not expected to be far from the real ones

Migrants' transfers

The recorded data show a high volatility compared to the stability of Spaniards living abroad
Their weight in the total migrant-related flows is too significant (*ITRS*)

An overestimation of this item in the Spanish BoP, especially as regards credits

MIGRATION RELATED FLOWS IN THE BoP: NEW CONCEPTS (BPM6) (I)



Personal transfers: *All current transfers* in cash or in kind made/received by resident households to/from other non-resident households. **Workers' remittances** ("*remittances of resident employees*"), included in personal transfers, will be registered as a supplementary item

Personal remittances: *Personal transfers + net compensation of employees* (gross compensation – taxes on income and social contributions – transport and travel) + *capital transfers* between households

Total remittances: *Personal remittances + social benefits* (transfers to households from other institutional sectors, namely government and Non-Profit institutions serving households)

Table 2

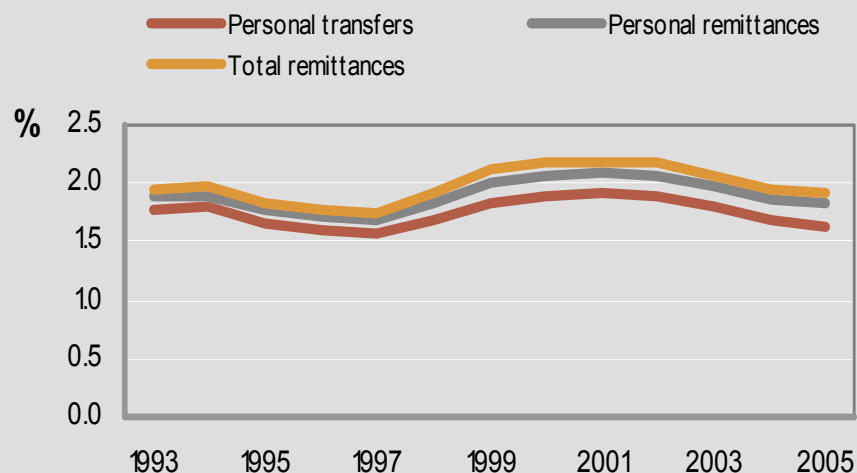
BoP data € millions	1993		1999		2005	
	Cred.	Deb.	Cred.	Deb.	Cred.	Deb.
Personal transfers	1,598	380	3,494	1,134	4,721	4,963
Of which: Workers' Remittances	1,484	293	3,110	910	4,298	4,614
Personal remittances	1,692	469	3,825	1,462	5,261	5,586
Total remittances	1,760	622	4,041	1,996	5,553	6,308

Source: Banco de España

MIGRATION RELATED FLOWS IN THE BoP: NEW CONCEPTS (BPM6) (II)

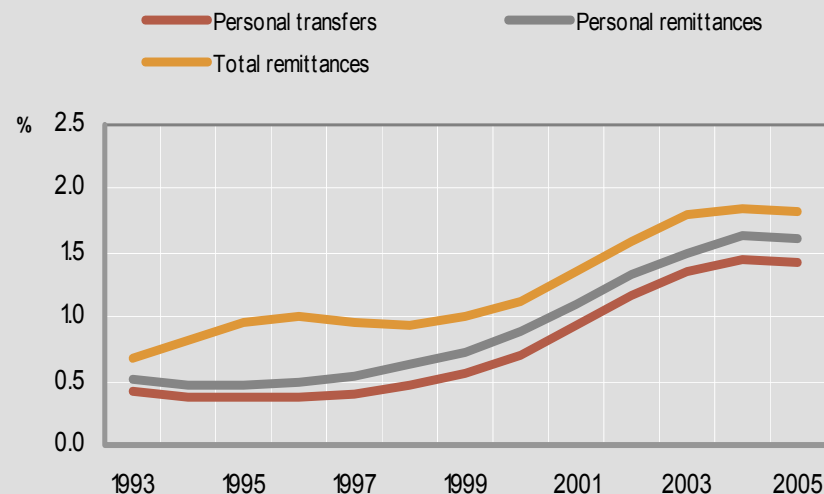


Chart 3: credits (% total credits BoP)



Source: Banco de España

Chart 4: debits (% total debits BoP)

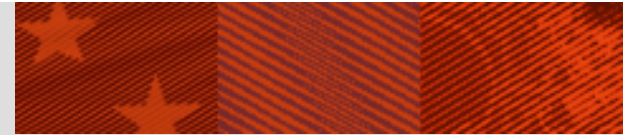


Source: Banco de España

In the Spanish BoP, the evolution of the new definitions of “remittances” is still determined by the Workers’ remittances heading

On the debits side, the upward trend of Workers’ remittances explains the change in the level of the new definitions of “remittances”

MIGRATION RELATED FLOWS IN THE BoP: NEW CONCEPTS (BPM6) (III)



Workers' remittances ("remittances of resident employees") (current transfers made by migrants/immigrants resident abroad/in Spain)

ITRS + Money Transfer Operators + Population statistics

Other current transfers (only alimony made or received by households and self-employed, whatever the counterpart of the transaction consists of) **ITRS**

Net compensation of employees (wages and salaries or any other item related to remuneration of employees transferred by means of resident banks, net of taxes, social contributions and payments in kind) **ITRS**

Certain capital transfers (donations made or received by resident households and self-employed, whatever the counterpart of the transaction consists of) **ITRS**

Other current transfers not included in personal transfers (donations, prizes, social contributions, associations and clubs contributions, etc.) **received by households and self-employed for credits and made by the public sector plus NPISH for debits ITRS**

Personal Transfers

(Overval.?)

Personal Remittances

(Overval.)

Total Remittances

(Overval.)

Limitation: Identification of Resident / Non-Resident Sectors (mainly households)

CONTENTS

Migration-related flows data recorded in the Balance of Payments: methodological (BPM5 and BPM6) and practical issues

Spanish Workers' remittances: recent evolution and estimation problems

The Workers' remittances debits in the Spanish BoP: new estimation procedure and revision of historical series

Main conclusions

SPANISH WORKERS' REMITTANCES: RECENT EVOLUTION

Workers' remittances (BPM5, para. 302):

Current transfers by migrants who are employed in new economies and are considered residents there

Main features: Increasing importance of Spanish flows as financing source for Latin American countries.

A surplus of €2,276 million in 2000 (0.4% of GDP) gave way to a deficit of €316 million in 2005 (0.04% of GDP), owing to the rise in payments (from 0.2% of GDP in 2000 to 0.5% in 2005) and the flatness of revenues (0.5%).

Some facts indicated that previous data might not be accurately measured:

High volatility of the growth rate from 1993 to 2005

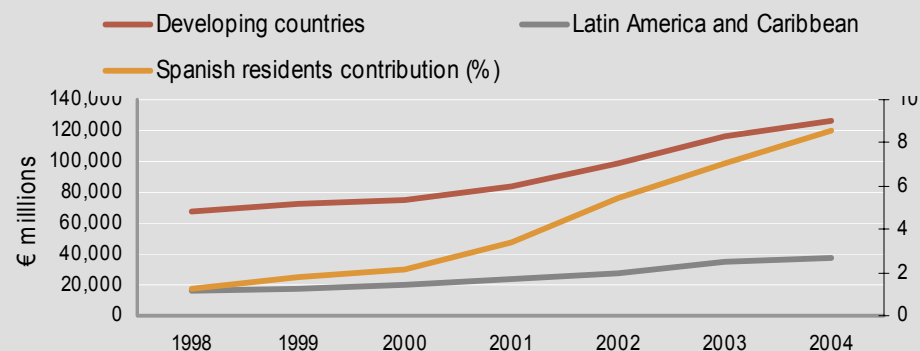
Change in the level from 2001 (euro banknotes and higher simplification threshold).

Data disseminated by the Banco de España:

Monthly data (credits and debits) (www.bde.es/) and geographical breakdown on an annual basis 2004-2005

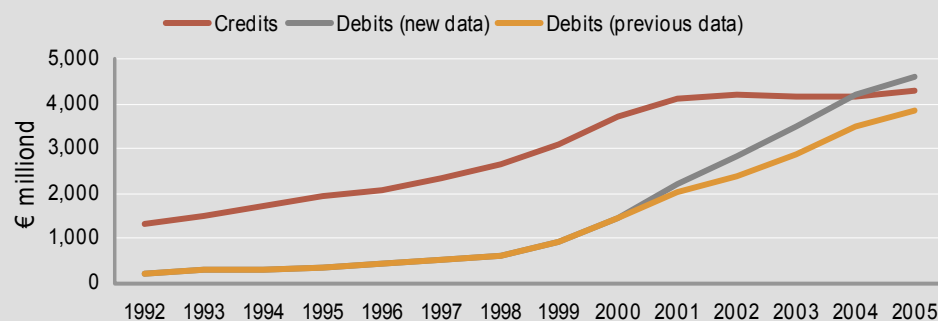


Chart 5 : Workers' Remittances to developing countries and Spanish share



Source: Global Development Finance 2005, World Bank

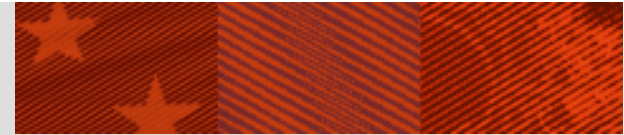
Chart 6: Spanish data 1992-2005 (new data for debits)



Source: Banco de España

Focus on debits: they gained relevance in recent years

SPANISH WORKERS' REMITTANCES: ESTIMATION PROBLEMS (I)



1. Published data weaknesses

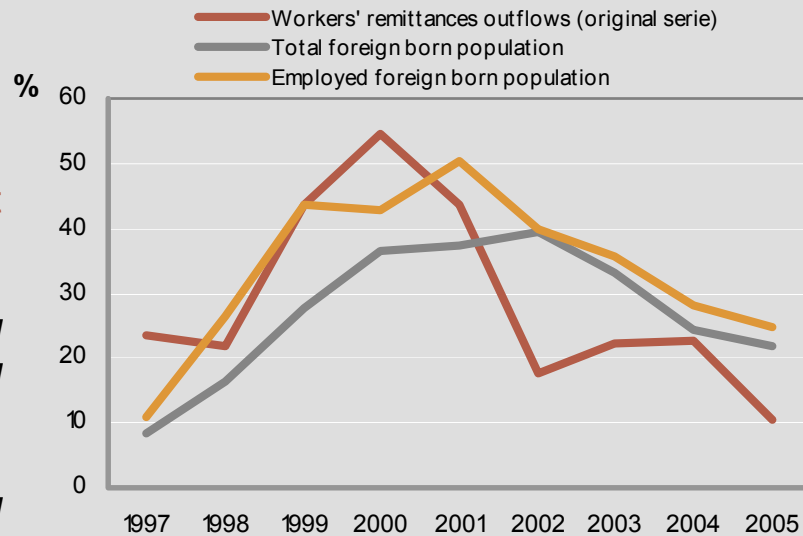
The available evidence suggested an underestimation of the previous data on Workers' remittances debits in the Spanish BoP

Workers' remittances and evolution of immigrant population and immigrant employed population:

Until 2001 Workers' remittances debits increased at higher rates than the immigrant population and the immigrant employed population

From 2001 to 2005 remittances debits increased at lower rates than the foreign population and the migrant employees

Chart 7: Workers' remittances outflows and foreign born population resident in Spain (Year to year rates)



Source: Instituto Nacional de Estadística and Banco de España

Table 3

	1996-2005 (y/y, average)
Immigrant employed population	34%
Remittances sent from Spain (previous data)	29%

The Spanish BoP appeared to chart the rising trend in the immigrant population. However, it did not reflect its full intensity: possible underestimation of debits

SPANISH WORKERS' REMITTANCES: ESTIMATION PROBLEMS (II)



Workers' remittances outflows previously registered in the Spanish BoP and inflows figures from the main recipient countries of remittances originated in Spain

The differences between debits recorded by Spain and credits recorded by main counterpart countries suggested an understatement of Spanish data close to 15%/20%

Workers' remittances outflows previously registered in the Spanish BoP and information on transfers sent abroad from Spain via Money Transfer Operators and reported to the Banco de España for supervision purposes

Table 4

2004 data Millions of Euro	BoP (Previous data)	MTO
Remittances outflows	3,481	3,421

Source: Banco de España

According to the results of certain surveys of the immigrant population resident in Spain and sending money abroad, a significant part of the transfers are made via Money Transfer Operators (nearly 80%). This would mean an underestimation of the remittances debits previously recorded in the Spanish BoP close to 20%

SPANISH WORKERS' REMITTANCES: ESTIMATION PROBLEMS (III)



2. Information source weaknesses

Until 2006 the estimation was exclusively based on the information on foreign receipts and payments obtained through the ITRS

The use of this information has serious limitations...

Significant impact due to the existence of a reporting threshold for the transactions between residents/non-residents in Spain (12,500 Euro since January 2001). For transactions below the threshold, the total amounts should be reported, not the purpose of the transaction. The distribution of these amounts among the different BoP items is estimated and a significant weight was allocated to the Workers' remittances item

No guarantee that all relevant transactions are collected: informal channels (banknotes, transfers in kind, etc.). No estimation was being made of these transactions

Transactions might be misclassified among several BoP headings. Some funds remitted might be classified as Compensation of employees, Migrants' transfers or even Other investment or FDI

Geographical distribution of the data according to the first known counterpart does not necessarily coincide with the country of ultimate destination of the funds (this limitation is relevant given the importance of transfers made through Money Transfers Operators)

SPANISH WORKERS' REMITTANCES: ESTIMATION PROBLEMS (IV)



Main findings:

- An unexpected and significant flow of immigrants to Spain: a huge increase in remittances outflows that is expected to continue in the future
- The figures from the main recipient countries of remittances originated in Spain and the information reported by the Money Transfer Operators to the Banco de España for supervisory purposes suggested an understatement of the remittances debits data recorded in the Spanish BoP close to 20%

Next steps:

- To quantify the underestimation in the data and to correct it

Lines of research:

- Use of the stock of the migrant population in Spain and their characteristics
- To estimate an econometric model using more advanced econometric techniques
- Analysis of other available information sources

WORKERS' REMITTANCES: INFORMATION SYSTEMS AVAILABLE



Information systems	Main limitations	Main advantages
International transactions reporting systems (ITRS)	<ul style="list-style-type: none"> ➤ High reporting thresholds for individual transactions (12,500 euro) ➤ No information on remittances via informal channels ➤ Distortions in geographical data 	<ul style="list-style-type: none"> ➤ Low reporting burden ➤ Low cost for compiling agencies
Foreign born population statistics (total population, employment data, nationality, sex, age, etc.)	<ul style="list-style-type: none"> ➤ Some relevant variables might be difficult to obtain (length of stay in host country and propensity to remit) 	<ul style="list-style-type: none"> ➤ Consistency between flow estimates and characteristics of foreign born population ➤ Enables the estimation of total (formal / informal) remittances
Specific surveys to potential senders/receiver	<ul style="list-style-type: none"> ➤ High cost for compiling agencies ➤ Difficulties in sample design and quality control ➤ Underestimation of main variables 	<ul style="list-style-type: none"> ➤ Availability of supplementary information (channels, frequency, country of destination, reasons for the transaction) = high quality data
Other systems (mirror statistics, foreign banknote data, transactions via specialised operators, estimation of models, etc.)	<ul style="list-style-type: none"> ➤ Specific limitations of each of the sources of information involved 	<ul style="list-style-type: none"> ➤ Incorporation of several sources
Spanish system	<ul style="list-style-type: none"> ➤ Until 2006: ITRS (Debits and Credits) 	

CONTENTS

Migration-related flows data recorded in the Balance of Payments: methodological (BPM5 and BPM6) and practical issues

Spanish Workers' Remittances: recent evolution and estimation problems

The Workers' remittances debits in the Spanish BoP: new estimation procedure and revision of historical series

Remittances estimation using foreign born population statistics

A panel data econometric model for remittances sent abroad from Spain

Analysis of other available information sources

Main conclusions

REMITTANCES ESTIMATION USING FOREIGN BORN POPULATION STATISTICS (I)



Objective: to estimate a maximum figure for remittances sent abroad from Spain (“potential remittances”) taking into account the information available on the characteristics of the immigrant population

Assumption: there is a strong link between the remittances flows and the number of immigrants and their profile (level of education, activity sector, wages, propensity to spend, family ties, etc.)

According to this profile, the immigrant population was split into four groups: Latin America, European Union, Rest of Europe and Rest of the World

Table 5

2005	Age structure		Activity rate
	More than 16 % total	More than 54 % total	Aged 16-54 % total
European Union	95	30	77
Latin America	93	4	83
Rest of Europe	89	5	84
Rest of the World	92	5	73

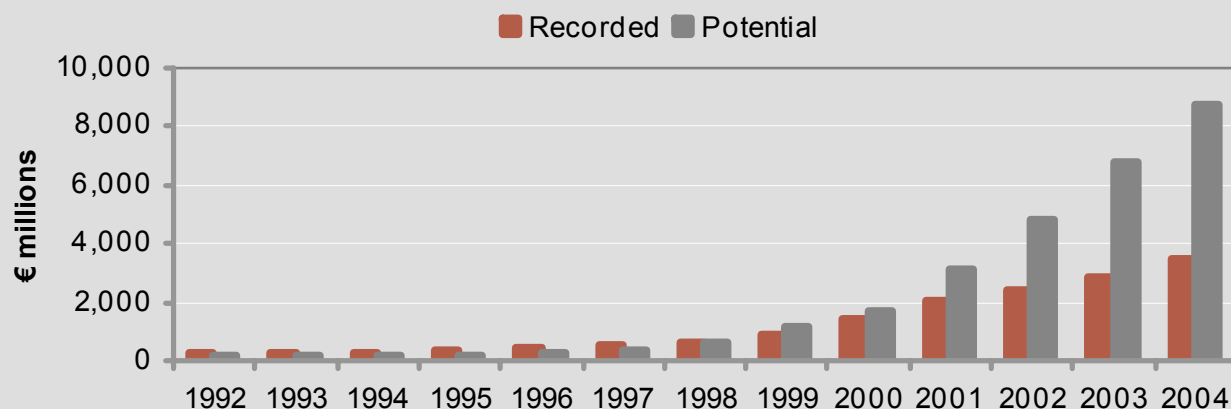
Source: Instituto Nacional de Estadística

Potential Remittances = Stock of Immigrants * Disposable Income per Immigrant

REMITTANCES ESTIMATION USING FOREIGN BORN POPULATION STATISTICS (II)



Chart 8: recorded remittances in the BoP and potential remittances estimated



Source: Banco de España

“Potential remittances” should be understood as a ceiling and not as an estimation of actual remittances

For the estimation of the actual remittances sent abroad from Spain, it is necessary to know the propensity to remit of immigrants resident in Spain, information not available

Foreigners from developing countries account for the 70% of the total: the low income level of this group suggested that a significant part of their disposable income was being sent to their countries of origin

For the period 2001-2004 the gap between recorded remittances and “potential remittances” suggested a maximum underestimation of BoP figures close to 51%

A PANEL DATA ECONOMETRIC MODEL FOR REMITTANCES: THE EQUATION (I)



Equation

$$r_{it} = \alpha_i + \beta'z_{it} + v_{it}, \quad i=1, \dots, N; t=1, \dots, T \quad (1)$$

– r_{it} Workers' remittances debits recorded in the Spanish BoP for the country i in the year t

– α_i specific effect for country i (different level of human capital for each group of immigrants, cultural features for each country, etc.)

– z_{it} is a vector of explanatory variables of Remittance payments to country i

– v_{it} is a random shock in the Remittance equation

Previous steps

Identification of the main determining factors for remittances: the motivation to remit is the clue (two approaches)

Classification of the immigrants resident in Spain according to their motivation to remit

A PANEL DATA ECONOMETRIC MODEL FOR REMITTANCES: THE EQUATION (II)



Identification of the main determining factors for remittances: the motivation to remit is the clue (two approaches)

Type 1 (altruistic motive): immigrants send remittances to increase the welfare of their families, who are still living in their country of origin.

Determining factors: the level of poverty of the family, the ties with their relatives, the economic situation in the host countries, the length of their stay, the stock of immigrants in the host country (*Lucas and Stark (1985)*)

Type 2 (investment motive): immigrants send remittances to finance their own investments abroad (the self-interest motive or the investment motive).

Determining factors: the interest rate and the exchange rate differentials between the host country and the country of origin (*Straubhaar (1986) and Glytsos (1988)*)

A PANEL DATA ECONOMETRIC MODEL FOR REMITTANCES: THE EQUATION (III)



Classification of the immigrants resident in Spain according to their motivation to remit:

Type 1 (altruistic motive): Developing countries: Latin America, Africa and Asia (group 1) and Eastern Europe countries (group 2)

Type 2 (investment motive): Developed countries: European Union and USA (group 3)

A panel data econometric model for remittances has been estimated for each group

Estimation period: 1993-2000

Estimation method: Ordinary Least Squares (OLS)

Countries considered: Accounted for 95% of total remittances sent abroad in 2004

A PANEL DATA ECONOMETRIC MODEL FOR REMITTANCES: RESULTS OF THE ESTIMATED MODEL (1993-2000)

Model 1 (Latin America, Africa and Asia): the coefficients of the explanatory variables have the expected signs, with those relating to the *altruistic motive* being more significant:

Spain GDP: the higher the growth in the host country, the higher the income received by the immigrant and the greater volume of remittances sent.

Foreign GDP: the higher the growth in the home country, the less remittances the immigrant needs to send to improve the well-being of his/her family.

Period of stay: the longer the stay, the weaker the family ties, and the less the remittances sent.

Exchange rate (local currency/Euro): a depreciation of the home currency reduces the level of remittances sent in Euros (“ambiguous effect”)

Model 2 (East Europe): positive relation between remittances sent and the stock of immigrant population and the interest rate differential (*¿investment motive?*).

Model 3 (USA and the EU): positive relation between the remittances sent and the interest rate differential (*investment motive*).

Table 6

Variable	OLS	t-ratio	OLS2(1)	t-ratio
Stock-Imm _g	0.5478	4.52	1.5937	9.18
GDP-ratio	1.0578	3.15	-	-
Spain GDP	0.1607	2.64	0.1362	2.73
Foreign GDP	-0.0172	-0.66	-0.0329	-1.49
Stay	-0.7237	-2.24	-	-
Interest gap	-0.0000	-0.15	-	-
Exchange rate	0.0213	0.47	-0.6111	-3.44
R ²	0.687		0.994	

OLS2 = OLS + country specific effect

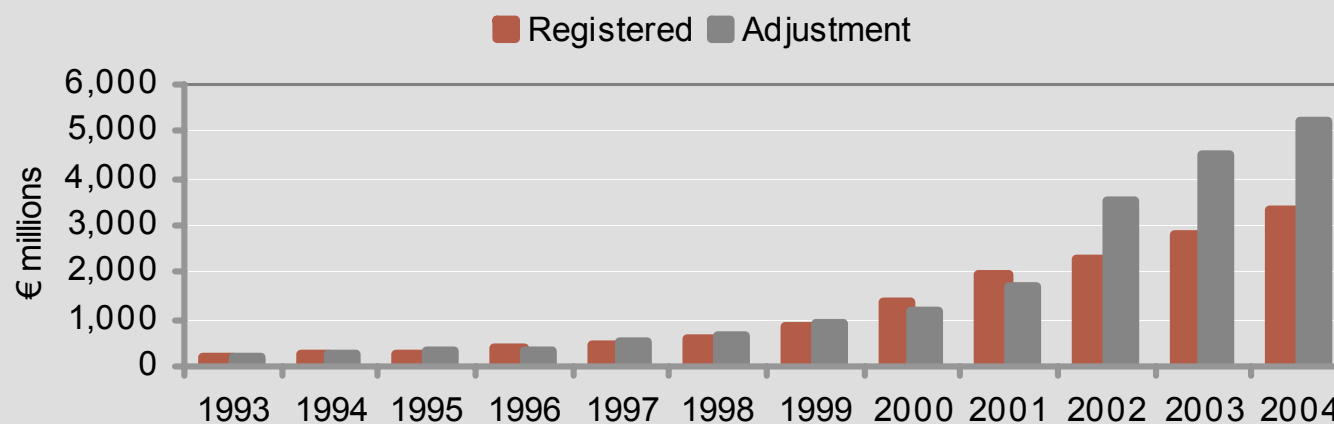
A PANEL DATA ECONOMETRIC MODEL FOR REMITTANCES: PROJECTION OF THE MODEL



Estimation and projection of the three models

The projection of the models for the 2001-2004 period suggested an average underestimation of the remitted payments registered in the Spanish BoP close to 25%

Chart 9: Registered remittances and projection (adjustment) of all models



Source: Banco de España

OTHER AVAILABLE INFORMATION SOURCES



Household surveys. **Weaknesses:** there are not appropriate questions and immigrants do not have enough representation

Surveys to potential senders: one-off Spanish survey 2002. **Weaknesses:** too expensive to implement and no guarantee that answers would be correct

Main counterparty credit data. **Weaknesses:** every country uses a source and a method to estimate remittances, frequently data across countries are not comparable

The use of data remitted to the Banco de España by Money Transfer Operators for supervisory purposes. **Weaknesses:** only data since 2002

Apart from Money Transfer Operators data no additional sources are yet available.

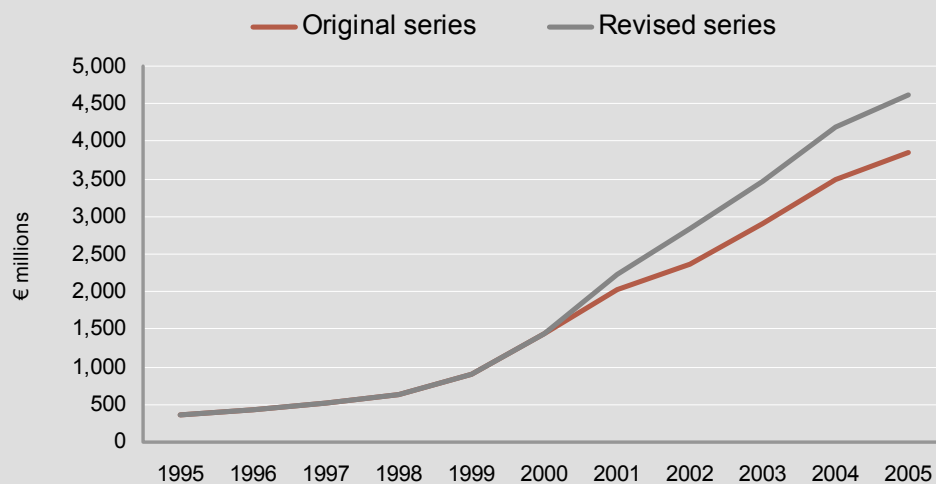
MAIN RESULTS: A REVISION OF HISTORICAL SERIES

Potential remittances suggest a maximum underestimation of the remittances registered in the Spanish BoP close to 51% in 2001-2004

The equation estimated with panel data points to an underestimation of the remittances registered in the Spanish BoP by 25% in 2001-2004, similar to that obtained from counterpart BoP data and transfers Money Transfer Operators (close to 20%)

It was decided to supplement the data on foreign receipts and payments with the information provided by Money Transfer Operators: revision of the 2001-2005 series and geographical breakdown

Chart 11: revision of the Workers' remittances debits registered in the Spanish BOP



Source: Banco de España

Table 7. Geographical distribution of the original and revised series (2005 data, % of world total)

	Original Series	Revised series
Latin America and the Caribbean	47.6	69.5
European Union 15	11.4	6.6
Rest of Europe	2.2	8.5
Rest of the world	38.8	15.4

MAIN RESULTS: INFORMATION SOURCES CURRENTLY USED TO ESTIMATE WORKERS' REMITTANCES IN SPAIN



Information systems	Main limitations	Main advantages
International transactions reporting systems (ITRS)	<ul style="list-style-type: none"> ➤ High reporting thresholds for individual transactions (12,500 euro) ➤ No information on remittances via informal channels ➤ Distortions in geographical data 	<ul style="list-style-type: none"> ➤ Low reporting burden ➤ Low cost for compiling agencies
Foreign born population statistics (total population, employment data, nationality, sex, age, etc.)	<ul style="list-style-type: none"> ➤ Some relevant variables might be difficult to obtain (length of stay in host country and propensity to remit) 	<ul style="list-style-type: none"> ➤ Consistency between flow estimates and characteristics of foreign born population ➤ Enables the estimation of total (formal / informal) remittances
Specific surveys to potential senders	<ul style="list-style-type: none"> ➤ High cost for compiling agencies ➤ Difficulties in sample design and quality control ➤ Underestimation of main variables 	<ul style="list-style-type: none"> ➤ Availability of supplementary information (channels, frequency, country of destination, reasons for the transaction) = high quality data
Other systems (mirror statistics, foreign banknote data, transactions via specialised operators, estimation of models, etc.)	<ul style="list-style-type: none"> ➤ Specific limitations of each of the sources of information involved 	<ul style="list-style-type: none"> ➤ Incorporation of several sources
Spanish system	<ul style="list-style-type: none"> ➤ Previous: ITRS (Debits and Credits) ➤ New: ITRS + population statistics + Money Transfer Operators data (Debits) and ITRS (Credits) 	

CONTENTS

Migration-related flows data recorded in the Balance of Payments: methodological (BPM5 and BPM6) and practical issues

Spanish Workers' Remittances: recent evolution and estimation problems

The Workers' remittances debits in the Spanish BoP: new estimation procedure and revision of historical series

Main conclusions

MAIN CONCLUSIONS

The ITRS constraints have implications for the quality of the migration-related flows recorded in the Spanish BoP

The recent and significant flow of immigrants has increased the relevance of workers' remittances debits in the Spanish BoP: preliminary analysis suggested an undervaluation of the data published until 2006

Use of all available information sources permits to improve the previous estimation for workers' remittances debits: an increase of 20% in the previous level

Improving the methods for the rest of migration-related flows in the Spanish BoP has still to be implemented



PATROCINIO TELLO

THANK YOU FOR YOUR ATTENTION

BANCO DE **ESPAÑA**



150 AÑOS DE HISTORIA
1856 - 2006

BALANCE OF PAYMENTS DEPARTMENT