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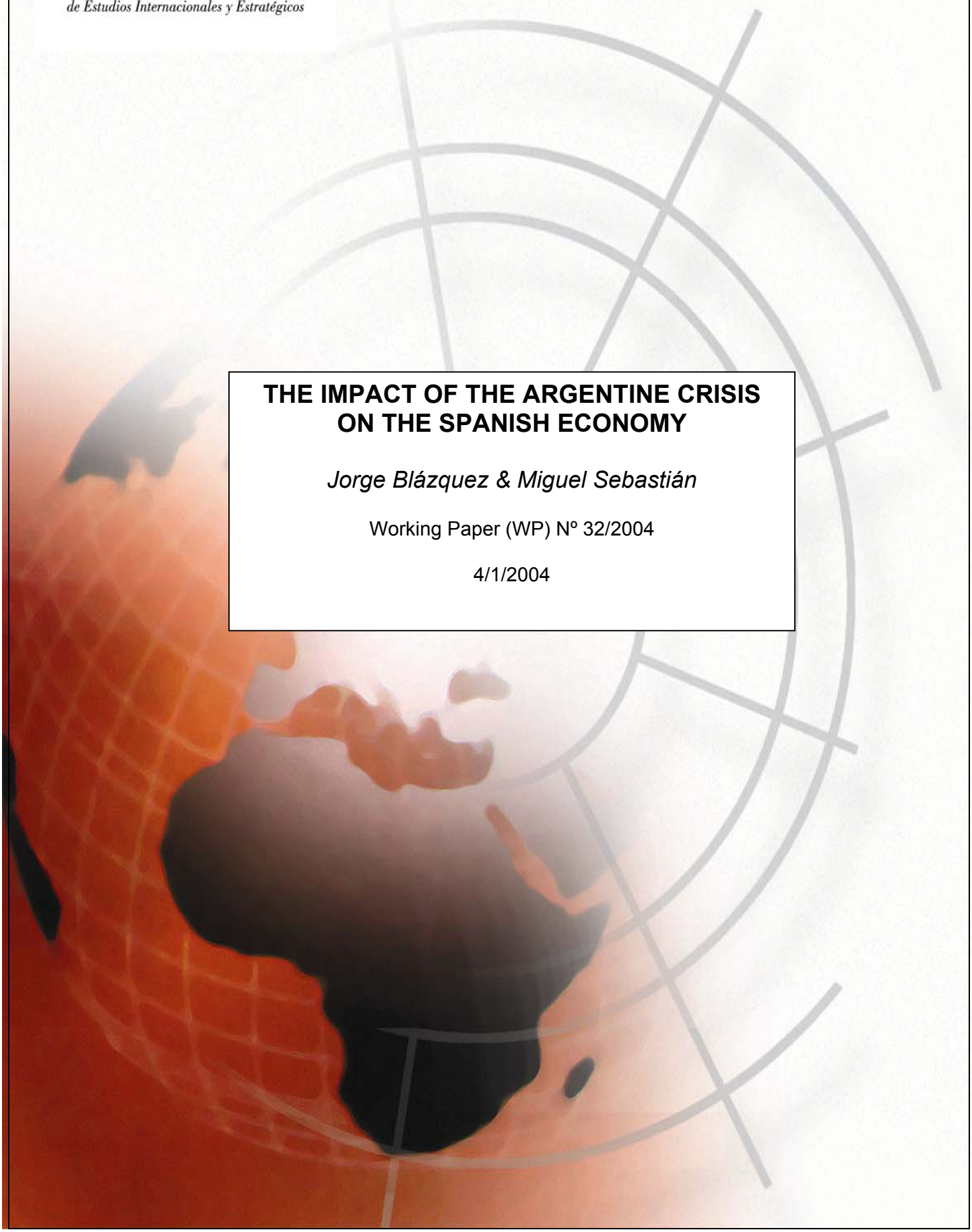

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The impact of the Argentine crisis on the Spanish economy

Jorge Blázquez[*] *& Miguel Sebastián* [**]

Summary: This report (1) undertakes the first quantitative assessment of the impact of the Argentine crisis on the Spanish economy in terms of gross domestic product. The conclusion reached is that in the period 1999-2002 Spain's GDP would have risen an additional 0.8% were it not for the crisis.

Introduction

The Argentine crisis had an important impact on the Spanish media. In the four years the crisis has lasted so far, what is popularly known as the 'Argentine tragedy' has been followed very closely by Spain's journalists, be it from an economic or a socio-political standpoint. This close concern is understandable for various reasons. Naturally, there was the emotional concern prompted by the historical ties linking Spain and Argentina. This was important enough, but was outweighed by other factors. To begin with, the Argentine crisis was the largest default on repayment of sovereign debt in world history, US$50 billion. At the beginning of 2002 the Argentine government said that it could not meet repayments as a consequence of the dramatic economic problems the country faced. Then there was the magnitude of the crisis. Between 1998 and 2002 Argentine GDP fell by 18%, its currency lost 70% of its value and earnings per capita in dollar terms went down by nearly 68%. And, in third place, there was the run on the banks and the international alarm generated by the scenes witnessed when the government declared first the *corralito,* then the *corralón*, the two clampdowns on deposit withdrawals. However, when all is said and done, the main reason for the interest shown in Argentina by the Spanish press is the significant presence of Spanish companies in that country. According to Chislett (2003), direct investment in Argentina between 1992 and 2001 totalled some €26.3 billion.

It is ironic that despite the interest here in the Argentine tragedy, there are very few academic analyses or quantitative assessments of its effects on Spain. The general view seems to be that the effect on the Spanish economy was negligible. This is attributed to two factors: the strong growth of the economy in the period 1998-2001 and, secondly, the fact that trade relations between Spain and Argentina are relatively small, leading to the conclusion that the risk of Spain catching an 'Argentine cold' was minimal.

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Yet it should be emphasised that the channels by which the Argentine crisis could have spread to the Spanish economy are not the usual ones. Spain is a highly internationalised economy (2) and the range and variety of its trading partners is but one factor. The contagion channels analysed here number six, three factors relating to the 'real' economy and three financial factors.

Of the three dangers to the real economy, the first is via trade, studied here on a heterodox basis. The results show that the effect of the Argentine crisis by this route is limited. As for other routes, less well known and understood in this country, the effects proved to be a mixed bag in terms of size and effect, some positive, others negative. The second route for contagion was the cost to Spanish companies operating in Argentina. And the third route into the real economy is Argentine immigration. The crisis forced many Argentines to leave their country and Spain is one of the favoured destinations for skilled workers.

Of the financial channels we analysed three: (1) the impact on Spanish bond spreads; (2) the cost of the default itself; and (3) the contagion effect on the stock market. The evidence found was that the financial effect was by no means negligible. Indeed, the study shows that the Argentine crisis made significant inroads on the financial wealth of the average Spanish household.

Aside from a quantitative assessment of the damage, we also try to measure the effect of the crisis on Spanish economic growth. For this we used new methods, so a plea for caution in interpreting the results is not out of place. From an academic standpoint many of the results we give are open to challenge, given the hypotheses and assumptions employed. However, faced with the alternative of painting nothing but a qualitative picture, we thought it worthwhile to take research one step further, recognising the pitfalls but trusting that the ensuing debate among academics and professionals would justify our temerity. The quantitative results suggest that the Argentine tragedy detracted 0.8 percentage points of growth from the Spanish economy between 1998 and 2002.

The article is structured as follows. Section 2 looks at the size of Spanish investment in Argentina. Section 3 is a brief chronological account of the crisis itself. Section 4 looks at contagion via trade using a new quantitative form of analysis. Section 5 quantifies the cost of the crisis for Spanish companies installed in Argentina. Section 7 looks at the three most widely recognised channels of financial contagion. And Section 8 contains our conclusions.

Spanish Investment in Argentina

Argentina is one of the prime targets of Spanish overseas investment. According to Chislett (2003) Spanish companies invested US$26.3 billion in Argentina over the period 1992-2001, a long way ahead of the United States, which only managed US$9.1 billion. To get an idea of the size of this amount, it represents 5.4% of gross capital formation in Argentina in the ten-year period. It is also worth noting that Argentina was the Latin American country in which Spain invested most heavily. 33% of Spain's entire investment in the region went to Argentina, the same proportion as went to Brazil, despite being a smaller economy.

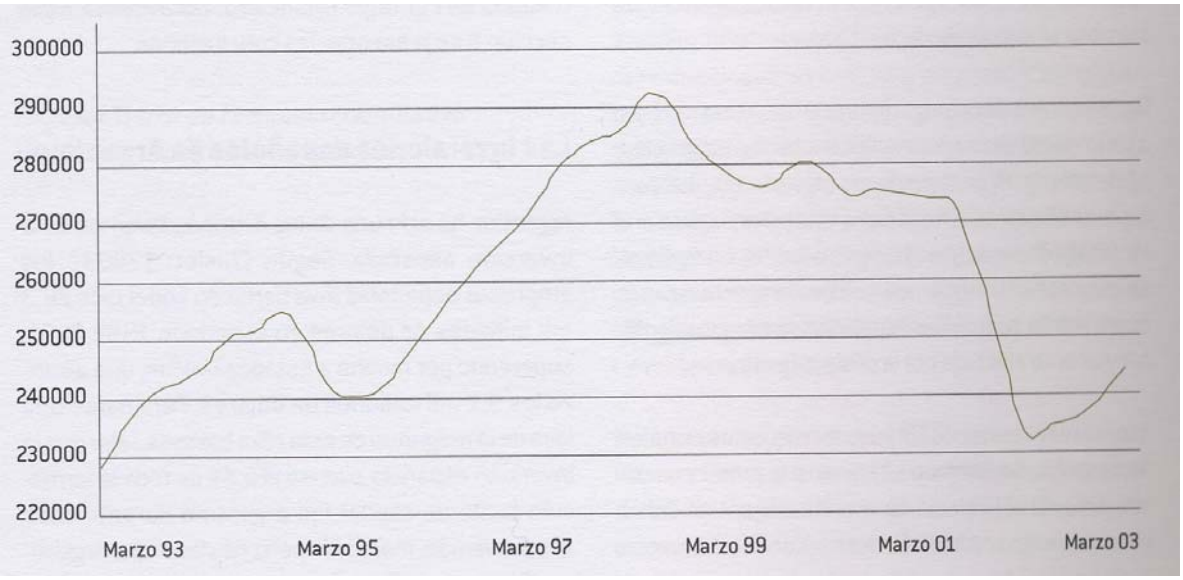
According to a survey conducted by the Centre for Latin American Studies (CESLA) in 2002 the Spanish Chamber of Commerce in Argentina showed as registered 385 Spanish companies operating in Argentina, though only 50 of them were active at that time. The main ones are (3): Repsol YPF, Santander Central Hispano, BBVA, Telefónica, Endesa, Gas Natural, Mapfre and Aguas de Barcelona. The names themselves give a rough idea of what sectors are most attractive to Spanish investment: oil & gas; banking;

telecommunications; electric energy; water management; and insurance. According to a study by the Foundation of the Spanish Chamber of Commerce in Argentina (FUCAES) conducted in May 2002, Spanish companies provided jobs directly to 70,000 employees, obtaining a turnover of 17 billion pesos in 2001. Spanish companies alone generated some 2.9% of Argentina's GDP in 2000 and 2001. Even more significant is the contribution of Spanish companies to the Argentine treasury, more than 11% of its total revenues in those two years.

A Brief Overview of the Argentine Crisis

Although the Argentine crisis broke out at the start of 2002, it had been simmering for a number of years. The economy went into formal recession in the third quarter of 1998, coinciding with the Russian default and the general flight of international capital from the emerging economies. This had a particularly drastic impact on a country whose money supply, due to the fixed exchange rate, was determined by external reserves. It meant that an external crisis immediately become a domestic monetary squeeze. The fixed exchange rate also prevented adjusting the current account other than by placing an additional squeeze on real output. For four years the country survived in a state of continual recession. The cumulative fall in activity from the third quarter of 1998 to the end of 2002 was 18%. As a result, output in 2002 was similar to that of 1993. A decade was wasted.

Graph 1. Argentine GDP in real terms (millions of 1993 pesos)



Despite the gradual build-up to the crisis, when it finally broke, it broke hard. The most obvious signs were in the last few days of 2001 and the first of 2002, when four things happened more or less simultaneously.

- Freeze on bank withdrawals. In December 2001 the government led by President De La Rúa, in an effort to halt the run on the banks, imposed stiff restrictions on withdrawals from deposit accounts, both sight and term, the so-called *corralito* and *corralón*. Over the preceding twelve months the banking system had already seen its deposits shrink by 19.5%, which gives an idea of the silent but inexorable advance of the crisis (4) prior to the panic bank withdrawals at the end of November 2001.

- Political and social unrest. In December 2001 middle-class Argentines marched

through the streets of Buenos Aires, making the fearful din known as the *cacerolazo*, in protest at the freeze on bank deposits. On 21 December President De La Rúa resigned in the face of his evident inability to contain the situation. Ramón Puerta, speaker of the Senate, stepped in to replace him, in the absence of a Vice-President, who had resigned earlier. On 23 December, Rodriguez Saá, governor of the province of San Luis, took over the presidential reins. But he was forced to drop them on 31 December when it was seen that he did not enjoy the support of the other governors. In his week at the top, Rodríguez Saá declared Argentina's default on privately held public debt to the rapturous applause and random bear-hugs of the members of Congress. Eventually, Eduardo Duhalde was sworn in as President by Congress on 2 January 2002.

- Declaration of default. This mainly affected private overseas bondholders, in possession of some 35% of the US$ 144.5 billion which Argentina owed as at December 2001. Domestic holders of public debt, notably banks and pension funds, had already had to restructure their repayment rights in November 2001, when the net present value of their holdings sank significantly.

- Breach of the Convertibility Act on 6 January 2002. This act of legislation, establishing parity between the US dollar and the Argentine peso, had been passed in 1991. From 6 January on, Argentina set up a conversion fund, which is an extreme version of a fixed exchange rate, before finally moving to a flexible rate. As a result, the official rate of exchange moved from US$/peso 1.00 at the beginning of the year to US$/peso 3.85 on 25 June, ie, a depreciation of 74% in just six months. The peso rebounded in June to end the year on US$/peso 3.36.

The crisis of 2002 warrants special attention. It was the worst recession in Argentina's recent history, with a fall in GDP of 10.9% in the first twelve months and of over 16% in the first quarter. The slowdown in domestic demand was even worse, shrinking by 17.1% on an annualised basis. The crisis did not occur in an overheated economy which is where exchange-rate crises normally strike, but in an economy that had been in the doldrums for four years, in which time GDP had shrunk by 8.4%. The crisis was also more severe than other similar events in emerging countries (see Table 1). It was not simply economic, but political, social and institutional also. The end result was a breakdown in confidence that accelerated the capital flight begun in 2001. Some US$ 13.5 billion, 16% of GDP, fled the country in 2002. Logically, this caused a spectacular adjustment at current account level, which registered a surplus of 10 decimal points.

Despite the widespread uncertainty and the political errors of the early days, the main threat to the Argentine economy did not materialise. Once the fixed exchange rate had gone, many economists feared a return to the hyperinflation and random fiscal policy of former years. Memories of those times meant that in the first half of 2002 people struggled hard to get their hands on dollars, sending the exchange rate plummeting even further. But initial fears of an outbreak of the vicious circle devaluation-inflation-devaluation proved unfounded due to the contracting money supply (5) and restrictive policies. After an initial jump in prices, inflation returned to monthly rates of less than one per cent and the exchange rate began to backtrack. At last, the real economy began to show signs of recovery in the second half of 2002, four years after the recession had set in. GDP began to climb as domestic goods took the place of imports and resources were finally invested in their production.

Table 1. Relative Cost of the Argentine Adjustment

	Devaluation	Default	Quarterly GDP		Trade balance (% of GDP) years			Current account (% of GDP) years		
			T+1	T+4	T-1	T+1	T+2	T-1	T+1	T+2
Argentina	Jan-02	Yes	-16.3	-3.4	1.3	14.8	12.3 (e)	-1.7	9.8	6.0 (e)
Indonesia	Aug-97	Yes	-2.1	-8.8	1.0	13.6	10.3	-3.3	4.4	4.1
Thailand	Jul-97	No	-1.5	-11.9	-1.4	18.5	14.9	-5.0	12.7	10.1
Turkey	Feb-01	No	-2.2	-9.3	-1.8	7.2	3.3	-4.9	2.3	-0.3
Russia	Aug-98	Yes	-8.1	2.2	3.6	17.2	21.3	-0.7	11.5	17.0
Ecuador	Feb-99 (1)	Yes	-7.3	2.5	-7.3	12.1	12.1	-10.6	6.7	6.7
Mexico	Dec-94	No	-0.4	-7.0	-4.2	4.2	3.4	-7.1	-0.6	-0.7
Korea	Nov-97	No	-4.6	-6.0	-0.4	15.3	8.1	-1.7	12.7	6.0
Brazil	Jan-99	No	-0.4	3.4	-2.3	-1.5	-1.2	-4.2	-4.7	-4.0
Uruguay	Jun-02	No	-13.6	-3.0 (e)	-2.4	1.6 (e)	3.4 (e)	-2.9	1.5 (e)	

(1) Date on which it abandoned the exchange-rate band. In January 2000 the rate was set at US$/ECS 25,000.
Source: BBVA.

Although 2003 appeared to herald the end of the Argentine depression, on a medium-term view the situation remains unsettled. The crisis of 2002 left a number of pending issues, the following among them.

- Compensate the banks for the losses they were forced to take when the fixed US$/peso exchange rate was adopted, using an exchange rate other than one-to-one and adjusted differently for deposits and loans, as well as regularising provisioned claims which have left bank balance sheets hopelessly distorted.
- Negotiate with international creditors a consolidation agreement on the country's overseas debt.
- Reach a definitive consolidation agreement, not a perpetual series of roll-overs, with the IMF and other multilateral lenders.
- Structure and improve the existing primary public revenue surplus, which is currently garnered from withdrawal taxes levied on overseas earnings and thus constitutes a disincentive for exports. The government will also have to drop the duty charged on financial transactions. Finally, the system of transferring resources to the provinces, governed by the Federal Co-Participation Tax Act, needs reforming.
- Negotiate higher prices to be charged by the public service utilities; the prices of utility services were frozen when the currency was devalued.

If the Argentine government and Argentine society are capable of implementing these essential structural reforms, the economic prospects in the medium term are promising. Such reforms can be seen as a firm commitment to a market economy and to Argentina

becoming a significant player in the international financial and trading environment. If they fail, Argentina will almost certainly face a long period of stagnant growth.

Impact on Spain: Trade Contagion
The Spanish economy underwent accelerated internationalisation in recent years. The degree of its openness to trade, measured as the sum of real exports and imports over GDP rose from 33.0% in 1990 to 63.5% in 2002. This greater openness to trade means that the Spanish economy is more vulnerable to external shocks, such as the crisis in Argentina. That said, the amount of trade with Argentina is very little, thus limiting the knock-on effects of reduced exports to the Southern Cone (6). According to figures used by the Spanish department of Trade and Tourism, exports to Argentina in 1995-98 represented approximately 1.2% of the total exports of Spanish goods. After four years of recession, exports to Argentina were practically non-existent. Finally, with the devaluation in 2002, they accounted for only 0.2% of all Spanish trade.

One way of measuring trade contagion is by *ceteris paribus* analyses. We can assume that Spanish exports to Argentina remained at the same level as in 1998 and from there reconstruct the curve they would have described had the crisis not occurred (8). Next we assume that the other items making up GDP also remained unchanged (9) and the result is an *adjusted* GDP which measures the effect of the Argentine crisis. This means of measuring trade contagion is open to objection as it ignores all indirect effects (such as the search for alternative markets). However, the figure to emerge is broadly speaking conservative, as it assumes as *reasonable* zero growth in exports in the absence-of-crisis hypothesis. Exact or not, it gives us an estimate of the quantitative cost of the Argentine crisis via the trade channel.

The results show that trade contagion was not negligible. The Spanish economy grew by 2.0% in 2002. If the crisis in Argentina had not stifled Spanish exports to that country, GDP growth for Spain would have been 2.1%. In other words the Argentine crisis subtracted one decimal point from Spain's 2002 growth which, if we accumulate the same figure from 1998 to 2002, rises to two decimal points. Thus, whereas the cumulative growth of the Spanish economy between the years 1998 and 2002 was 13.7%, if the Argentine crisis were excluded it would have been 13.9%. In short, the Argentine crisis subtracted about two percentage points from the Spanish economy as a result of trade contagion, equivalent to €1.4 billion in 2002.

Impact on Spain: the Cost for Companies Operating in Argentina (10)
Without doubt the Argentine crisis carried a cost for Spanish firms operating there. It is, however, a difficult cost to measure. According to the paper by Blázquez and Sebastián (2003), there are three ways of measuring the negative effect the crisis had on foreign companies.

The first is straightforward economics. All crises affect the remuneration of capital. This is because the recession presupposes an adverse economic environment that reduces return on investment. In addition, this fall in ROI is common to both domestic and foreign companies. On this basis, the Argentine crisis was a four-year recession resulting in a cumulative fall in GDP of around 18%. However, there was another negative effect of the crisis which affected foreign companies more than it did their domestic peers: the severe depreciation of the currency. A Spanish company investing abroad values its expected return on that investment in euros, not in local currency. Thus, depreciation of the Argentine peso, which at one stage reached 70%, has a very negative effect on the valuation of the overseas investments of foreign companies both on their balance sheets and their results statements. When due account is taken of the combined effect of the recession and of the devaluation on the economic value of those foreign investments, we discover that value fell by about 71%.

To gauge the losses suffered by Spanish companies we need to know how much they invested previously. According to the Argentine Ministry of the Economy, total Spanish investments in Argentina as at 31 December 2001 stood at US$20.0 billion. (11). Of these we assume that they lost US$14.0 billion (€15.0 billion at the average US$/€ exchange rate of 2002), equivalent to 2.2% of Spanish GDP. This does not mean that Spain's GDP would have risen by 2.2% had Argentina not had its crisis. The result should be interpreted in terms of reduced wealth or, more specifically, of the reduced value of Spanish companies.

Another way of evaluating the cost of the crisis for Spanish companies is by using a bookkeeping approach. In Spain's case, the Institute of Accounting and Account Auditing (ICAC) worked out rules for recording the effects of the Argentine devaluation on the consolidated statements of Spanish companies. To avoid erring one way or the other, the rules established certain minimums, meaning that real bookkeeping losses may, in fact, have been greater. This is for two reasons: first the devaluation estimated by the ICAC for accounting purposes was 40%, versus an observed average devaluation in 2002 of 68%. Secondly, some companies, taking an even more conservative line, recorded on their books losses in excess of those stipulated by the ICAC. According to the ICAC estimates, the losses of Spanish companies with affiliates in Argentina amounted to € 9.6 billion, equivalent to 1.4% of the Spanish GDP.

The third and last valuation method is based on the market value of the companies concerned. This approach compares the market value of the parent companies with that of their European peers, as represented by the market performance of the corresponding European industry. For example, you can compare the performance of the shares of the Santander Group with those of the European banking sector. The difference in performance is attributed to the Argentine crisis. In a study conducted by Blázquez and Sebastián (2003) the market performance of Spanish Ibex-35 companies with interests in Argentina was analysed in this way with the result that the cost of the Argentine crisis came to €6.2 billion, equivalent to 0.9% of Spanish GDP.

As stated, these figures should not be interpreted in terms of lost growth but as lost wealth. In other words, the Argentine crisis meant a balance-sheet loss for Spanish companies –they lost enterprise value.

However, there was also an effect on Spain's economic performance. The costs borne by the parent companies and negative stock-market performances left Spanish companies at a disadvantage when it came to reinvesting, which *does* affect growth. The problem is that no one has yet worked out a valid way of evaluating the impact of a poor balance sheet on company investment and, thus, on growth. A rough but conservative approximation would have to be qualitative. The Argentine crisis must have cost the Spanish economy something via non investment in productive capacity. The exact amount of that cost we do not know.

Quantitatively, however, we can hazard a guess. It is a guess, and we make no bones about this. It consists of estimating what part of the known cost of the crisis would otherwise have been invested in productive capacity. According to the bookkeeping approach (12) companies had to write off some €9.6 billion, part of which could have been invested. Arbitrarily, we assume that only 20% of that amount (€1.9 billion) would have been invested. Nominal investment in productive capacity in 2002 was €72.1 billion. To this we add our figure of €1.9 billion. We observe from this that real investment in productive capacity would have risen by 0.4%, as opposed to the fall observed in 2002 of 0.2% (13). Given this growth and assuming all other factors constant, we obtain a GDP growth in 2002 of 2.3%, instead of the 2.0% recorded. In other words, the Argentine crisis,

by means of its impact on the balance sheets of Spanish companies, removed three decimal points from growth. Once again, we stress that this calculation must be looked on with caution.

Impact on Spain: Argentine Immigration

The severity of the Argentine crisis could be clearly seen in its effect on living conditions, which deteriorated significantly since the end of 1998. Real wages since 1999 fell by 16% in local currency and 67% in dollar terms. Unemployment in October 2002 was at 18%, compared with 12% in October 1998. Finally, the number of households below the poverty line in greater Buenos Aires rose to 42%, from 18% in October 1998. Aside from its impact on law and order, the gravity of the crisis started a major exodus.

According to the National Migration Department of the Argentine government, some 250,000 people (14) left the country since 2000, with Spain and Italy being the most favoured destinations, ahead of the United States (15). According to the same records, between 1993 and 1999 only 41,000 had emigrated, thus showing the demographic impact of the crisis over the last few years. The estimates are that in 2001 and 2002 some 60,000 Argentines came to Spain with the idea of setting up home here (16). Spanish immigration statistics are equally vague, given that many Argentines either have an EU passport or enter as tourists, making it difficult to say exactly how many decide to reside here. As an example, according to the records of the Ministry of the Interior, in 2002 alone, 128,312 Argentines arrived in Spain as tourists, whereas only 18,742 returned to Argentina when their visas expired. From these figures we must deduce that 110,000 Argentines remained in Spain as illegal immigrants (17). These figures will give the reader an idea of the difficulty in establishing with precision exactly how many Argentines came to Spain as a consequence of the crisis.

Immigration should not be seen as a cost, but as a gain for Spain. On average, Argentine immigration represents an influx of skilled labour which has no problem in adjusting to Spanish living conditions. Given the lack of firm statistics, to assess the quantitative effect without risk of upward distortion, we assume a figure of 60,000 Argentine immigrants. If we also assume that this additional workforce behaves very much as the domestic workforce, we can deduce that 11.4% (18) of these immigrants will be currently unemployed. By the same yardstick, this means that 53,100 Argentines found work in Spain between 2001 and 2002, equivalent to 6% of the total number of new jobs created in the period according to the Survey of the Working Population (EPA). If, finally, we assume that the productivity of Argentine immigrants is the same as that of Spaniards, they will have contributed approximately 0.3 decimal points to GDP in 2002 (19).

Impact on Spain: Channels for Financial Contagion

The financial channel is the most usual source of contagion (20) among emerging economies. When a crisis occurs in an emerging economy, the confidence placed in that economy declines further than that placed in the rest of the emerging economies. In risk management terms this is normally described as the increase in ‘risk aversion’. Risk aversion often gives rise to the ‘herd effect’, an undiscriminating stampede away from securities issued by all emerging countries. The drop in confidence initiates a process of disinvestment which raises the risk premium attaching to the emerging economies. However, the developed economies usually benefit from what is known as the ‘safe haven effect’, ie, investment funds abandon the emerging economies and head for the safer assets of the developed economies. Which side of the fence Spain is on in this context is unclear: it may suffer both effects simultaneously. There are obvious links by which some financial contagion between Spanish and Argentine assets is highly probable, given Spain’s numerous economic interests in Argentina. But it is equally true that Spain is a developed economy and, thus, a safe haven.

(a) 'Sovereign Spread'
To gauge potential financial contagion we first analyse the performance of Argentina's 'sovereign spread' (21) in comparison with that of Spain (22). To this end we focus on the period between October 1997 and December 2001, ie, up until the time of when Argentina defaulted on its debt repayments. We divide this time horizon into two types of sub-period: calms and storms, depending on the performance of the Argentine spread. If financial contagion is present, it should show up in the volatility of the yield on Spanish treasury bonds.

The figures show that Spain was not affected by contagion from the Argentine crisis via this channel. At the time of the Russian crisis, from August to October of 1998, there was a small contagion. Spain, as Argentina, suffered from the nervousness of international investors and the spreads of both countries deteriorated in parallel. For some unfathomable reason, Spain was considered a 'not entirely reliable' economy and subjected to the same ups and downs as those exhibited by the economies of the emerging countries. However, from the time of Spanish membership of the European Monetary Union (EMU) the correlations between the two spreads practically vanish. In fact, in the final period of volatility (March to December of 2001) prior to the Argentine default, there was a negative correlation that suggests a possibility that the market decided that Spanish bonds had become 'safe' assets. If so, from now on, and thanks to the euro, any crisis in emerging economies such as that of Argentina will favour the relative performance of Spanish bonds. In short, financial crises in emerging economies, instead of having a negative effect, have a positive effect on the performance of Spanish treasury bonds.

Table 2. Spread Contagion

	Period	Average spread (basis points)		Correlation
		Spain	Argentina	
Calm	October 97 - July 98	27	461	0,20
Storm	August 98 - October 98	40	776	0,65
Calm	November 98 - May 99	27	689	-0,29
Storm	June 99 - August 99	27	814	-0,17
Calm	October 99 - February 01	26	665	0,58
Storm	March 01 - December 01	31	1.684	-0,72

Source: Clearing house statistics.

(b) Direct Cost of the Argentine Default
Another source of contagion relates to holdings of Argentine bonds by Spanish residents. Debt default reduces the value of Argentine bonds which, in turn, reduces the financial worth of their holders. According to statistics compiled by Merrill Lynch, as at 31 December 2001, Spanish fund managers (23) held some US$10 millions' worth of Argentine bonds out of a total stock of such bonds of US$4.6 billion, ie, about 0.2%.

An interesting point is that Merrill Lynch's figures only relate to a small part of the Argentine debt. The face value of the bonds held by private foreign investors currently stands at US$48.2 billion, but the identity of those investors is largely unknown. This is not a peculiarity of Argentine bonds; it occurs in all economies that use bond issues to fund the country's debt. It explains why restructuring a national debt is often a long and painful process. Governments do not know who their creditors are and it requires a lengthy period of investigation to gather together a representative body to negotiate with (24). This being the only information available, we proceed on the basis that Spanish fund managers hold 0.2% of the total Argentine national debt held by private overseas investors, ie, US$96.4 million.

Using these figures we can roughly gauge the maximum losses suffered by Spanish holders of Argentine bonds. Using the dollar-denominated Argentine sovereign bond issue 'Global 2008' as benchmark (25), we see that the average traded price in 2002 was US$ 24.40 whereas the face value was US$100.00. Simplifying, this means that the face value of US$ 96.4 million is worth, in reality US$23.5 million. So, the net loss to the Spanish economy of the Argentine default can be estimated at US$72.9 million, equivalent to €86.7 million at the average exchange rate of 2002. Clearly, this figure is very low, showing that the impact via the channel was very small.

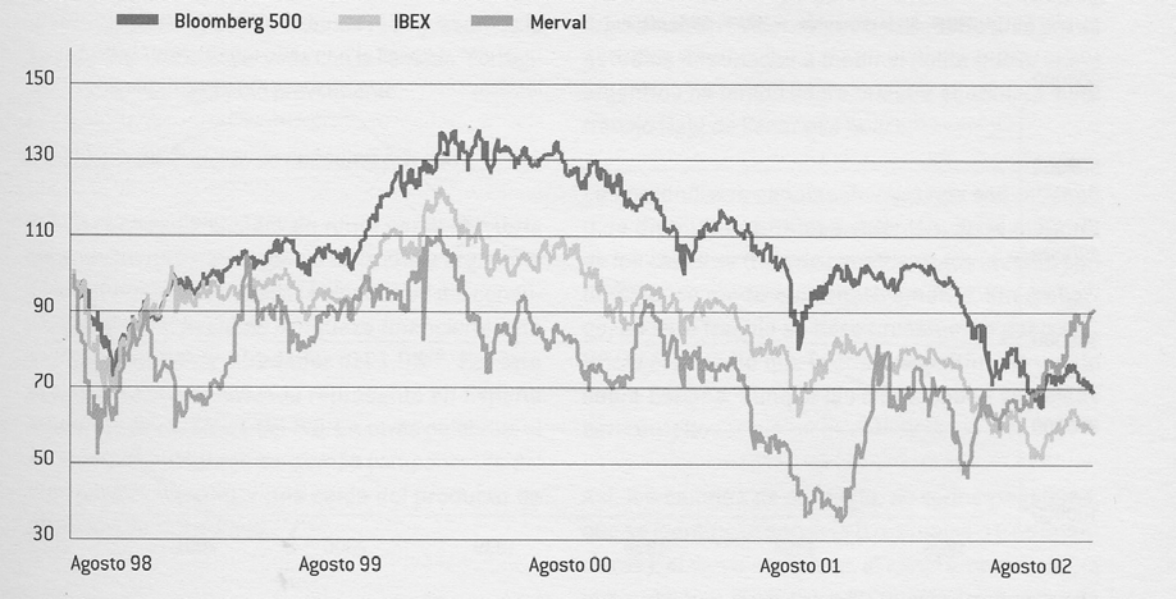
The financial wealth invested in fixed-interest securities, ie, bonds, by Spanish households in 2002 was approximately €561.1 billion. This means that the direct loss from default on fixed-interest wealth would have been approximately 0.01%; negligible, in other words.

(c) Stock-market Contagion

The third and most important source of financial contagion is related to the market value of the stock of Spanish companies. As explained earlier, the Spanish presence in Argentina at company level is significant. Understandably, the Argentine affiliates of these companies suffered the cost of the crisis, which had negative repercussions also on their parent companies in Spain. What is less understandable but almost certainly true, is that the shares of other Spanish companies, having no subsidiaries in Argentina, also suffered. This is what is considered stock-market financial contagion. In other words, a crisis in an emerging economy (Argentina) generates risk aversion which causes investors to dispose of all assets which they no longer regard as safe, viz. those traded on the Spanish stock market.

In short, the Spanish stock market paid double for the Argentine crisis. On one hand, it paid through the affiliates of its listed companies in Argentina. On the other, all the listed companies were affected by stock-market financial contagion. The result, from one channel or the other, was a net fall in the financial wealth of Spanish households.

Graph 2. Stock market index (August 1998 = 100)



One of the distinguishing features of the Argentine crisis was the slow pace at which it

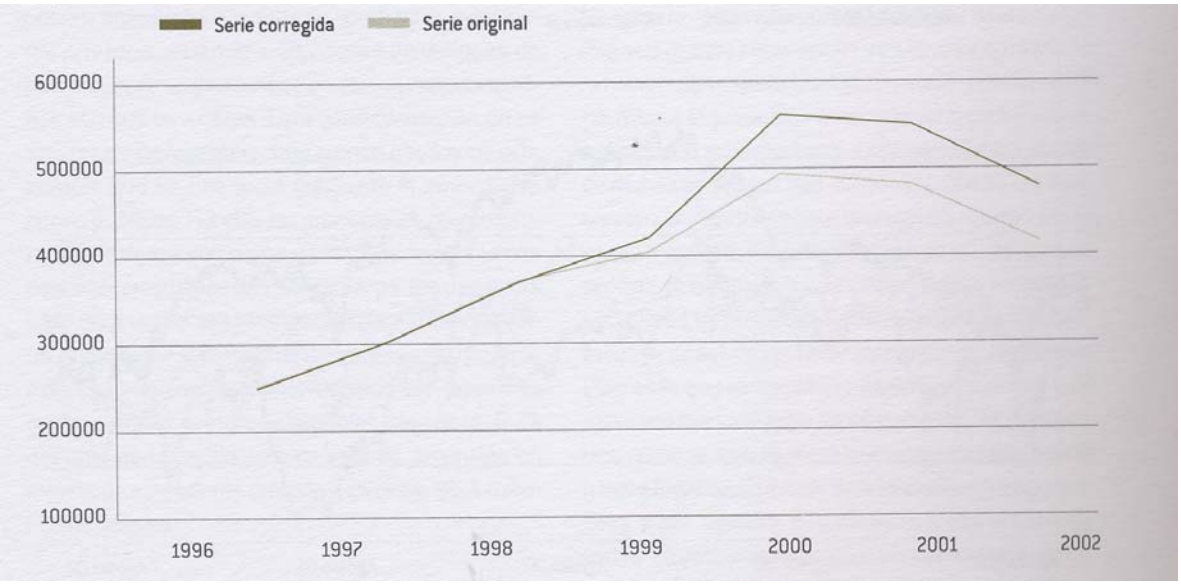
took hold of the country. Following the Russian crisis of August 1998 the Argentine economy went into a gradual decline resulting in the explosive crash of early 2002. Logically, the Argentine stock market had registered the decline preceding the crash. Also, we can observe from the chart that over the period the Spanish market (measured by the Ibex-35) appeared to behave more like its Argentine counterpart (Merval) than the European average (Bloomberg 500) (26).

Table 3. Average Yearly Yield

(%)	IBEX-35	Bloomberg 500	Merval
1999	9	15	-12
2000	9	23	3
2001	-19	-18	-27
2002	-21	-21	9

One way of gauging the stock-market cost of the Argentine crisis is to assume that, in the absence of such a crisis, the Spanish bourse would have performed in line with the other European bourses, as measured by the Bloomberg 500 index. Objections may be raised here on two counts. Firstly, the European economy taken as a whole and the Spanish economy, taken separately, performed differently, a circumstance that affects the stock markets, too. However, this argument, perfectly valid though it is, lends support to the idea that, in fact, there *was* a degree of contagion, as Spanish economic growth was higher than the European average. The stock-market indexes, however, say just the opposite. Despite the dangers, this is possibly the best way of tracing the contagion effect on the Spanish stock market. If Spanish companies had not been present in Argentina, there seems little to object to the view that the Spanish stock market would have performed at a level much closer to that of the average of the other European bourses.

Graph 3. Financial Wealth Variable (in millions of euros)



Using this approach it is possible to reconstruct the theoretical performance of Spain's financial wealth variable. (27). This variable, adjusted to take account of the Argentine crisis, can be obtained by assuming that, were it not for the crisis, the Spanish stock-market would have performed in line with the European average. As we see, there is a constant gap between the original and the adjusted series denoting that Spain–Europe performance disparity.

The lower financial wealth variable of the Spanish economy has a measurable economic impact. It works as follows. The Argentine crisis pushes down the market value of Spanish stocks, thereby having a negative effect on the wealth variable of Spanish households. Households, in turn, reduce their consumption, thereby affecting economic growth. To measure this effect we use a long-term consumption model designed by Balmaseda and Tello (2002). According to this model, the level of consumption is in positive correlation with financial wealth and the stock of available housing. To evaluate the cost of the Argentine crisis in terms of private consumption we undertook a *ceteris paribus* study, substituting our previously adjusted series for the recorded financial wealth variable.

Table 4. Private Consumption Variable

Dependent variable: private consumption	**Coefficient**	**Statistical 't'**
Constant	2.19	3.88
Disposable income	0.50	4.51
Wealth:		
in variable income	0.05	8.04
in fixed income	0.11	2.73
real estate	0.10	5.49

Source: Balmaseda and Tello (2002).

Thus, the financial wealth variable fell as a result of the Argentine crisis by approximately 20%. Given the elasticity of private consumption with respect to financial wealth, the reduction in consumption would have been around 1.0% (28). Now, private consumption accounts for approximately 58.4% of Spain's GDP. In other words, if we assume that the other items contributing to GDP remained constant, the measurable fall in GDP was 0.6 decimal points.

Conclusions

The Argentine crisis was an exceptional event both in duration (four years) and intensity (a cumulative fall in GDP of 18%). In addition, it had significant collateral effects. One of the economies potentially most exposed to the crisis was that of Spain, due to the major presence of large Spanish companies in Argentina. Although the economic and business ties between Spain and Argentina are clear for all to see, very little work has been done on measuring the cost to the Spanish economy of the Argentine crisis. This study is an attempt to fill that gap.

The channels capable of transmitting such contagion are many and varied. Also, in most cases they are channels whose effects are difficult to measure quantitatively. However, in this article we attempt to gauge the impact of the Argentine crisis on the Spanish economy, while warning that the figures should be handled with care.

Thus, the contagion channels, not all of which are negative, number six (three real-economy channels and three financial channels). The real-economy channels are trade, business and immigration. The financial channels are bond markets, direct cost of default and the stock-market knock-on effect on financial wealth. The channels and their estimated effects are shown in the following figure.

Table 5. Summary of Impact

	Cumulative impact on GDP 1998–2002 (%)
Trade contagion	-0.2
Financial contagion:	
Bond markets	+0.0
Cost of default	-0.0
Stock markets	-0.6
Immigration	+0.3
Business	-0.3
Total	**-0.8**

Source: RIE.

We therefore conclude that the Argentine crisis may have reduced Spanish economic growth over the period 1999-2000 by 0.8 decimal points. Between 1998 and 2002 the Spanish economy grew in real terms by 13.7%. According to our calculations, had it not been for the Argentine crisis, the figure would have been 14.5%.

We can end the report on a final *ceteris paribus* exercise. In 2002 Spain's nominal GDP was €693.9 billion. If we adjust this figure to account for the negative impact of the Argentine crisis, nominal GDP would move up to €699.5 billion. In other words, the cost of the Argentine crisis to the Spanish economy may be calculated at €5.6 billion at their 2002 value.

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Notes:

(1) Our thanks to the suggestions received from Manuel Balmaseda, Julián Cubero and Luciana Taft in the course of writing this article. The results and conclusions are entirely the authors' and do not necessarily correspond to those of the BBVA or the Complutense University of Madrid

(2) Internationalisation of the Spanish economy took place relatively quickly. Of the various works focusing on this phenomenon in detail, see Chislett (2002).

(3) See Chislett (2003).

(4) Worth reading here is the recent study by Dages and García-Herrero (2003) on the impact of the crisis on the Argentine banking system. After evaluation the costs caused by the crisis, the authors report that foreign banks absorbed most of them.

(5) Criticism of the issue of so-called 'quasi money', ie, means of payment in the form of bonds issued by the provincial or by central government (for example, the *patacones* of the province of Buenos Aires or the *lecop* issued by central government) is largely unjustified. Admittedly, such instruments came to represent 34% of the money supply, but the payment loop of the Argentine economy had broken down completely through lack of liquidity (capital flight, *corralitos* and *corralones*, etc) and the absence of a monetary multiplier.

(6) Madrazo (2003) conducts an exhaustive study on trade between Spain and Argentina. He also analyses the impact up to July 2002 on this part of the economy of the devaluation of the Argentine peso.

(7) This means of measuring the trade impact suffers from a certain degree of endogeneity, given that the value of exports to Argentina goes down as a result of the

devaluation.
(8) Given that Spain's national accounting figures do not itemise by country, the following rule of thumb is adopted. The ratio of exports to Argentina to Spain's total exports, according to customs returns, is the same as that given in the national accounting returns.
(9) In other words, public and private consumption, gross fixed capital formation, imports and changes in inventories are assumed constant, allowing only export performance to fluctuate.
(10) In this section we follow the work in this area done by Blázquez and Sebastián (2003).
(11) The CEPAL figure for cumulative Spanish investment between 1992 and 2001 is US$26.3 billion.
(12) We employ this method of evaluating the cost of the crisis on Spanish companies as it seems to us the best suited to our ends.
(13) To carry out the comparison we assumed that the investment deflator for capital goods remained unchanged.
(14) Figures are approximate, as the Office estimates migratory flows as the difference between Argentines leaving the country and Argentines returning.
(15) Unlike Spain and Italy, the United States demands a visa.
(16) This figure, also, is an estimate; there are no reliable statistics.
(17) As a matter of information, the number of Argentines residing legally in Spain in 2001 was 20,410, according to the Police Department of the Ministry of the Interior.
(18) Average for 2002.
(19) This is probably an underestimate as, in general, Argentine immigrants are highly skilled.
(20) For a summary of the economic theories behind financial contagion see Blázquez and Sebastián (2002).
(21) The spread is the difference between the yield of Argentine dollar-denominated long-term treasury bonds and bonds of the same maturity issued by the United States.
(22) This spread is based on the difference between the yield of a Spanish ten-year euro-denominated bond and a bond of the same maturity issued by the German State.
(23) Some Spanish companies hold sovereign Argentine bonds. But the cost of default for these holders is covered in Section 5, which deals with the cost of the default for companies.
(24) As an illustration, the first task of Lazard Frères, the consultants selected by the Argentine government to restructure the national debt held by overseas creditors, was to build a database of bondholders.
(25) It is generally agreed to be the most representative of the Argentine bond issues in foreign currency.
(26) The Bloomberg 500 tracks the five hundred largest European companies measured by market capitalisation.
(27) This variable is defined as Spanish market capitalisation plus unlisted equity held by fund managers. To simplify matters, financial wealth is assumed to perform in line with the stock market.
(28) This is long-term elasticity, meaning that the effects on activity are not immediate but spread over a number of years. However, given the disparate performance of the Spanish and the European bourses in 1999 and 2000, we assume that all effects took place between 1999 and 2002.

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