

“CREATIVE” BALANCE SHEET DEBT MANAGEMENT: GREEK SWAPS AND SWAPS A’ LA MILANESE

PhD candidate Andrea Carnelli has prepared this case under the supervision of Professor Andrea Buraschi as a basis for class discussion rather than to illustrate either effective or ineffective handling of state financing. While the main character and his circumstances are fictional, references to historical events are factual.

It was a mild morning in November 2001 when Nick was first introduced to his new office in the ministry of Greek finance in Athens. After completing a degree in Finance Nick had spent a few months interviewing in different companies for a job, until he received an offer for an internship at the Finance Ministry’s public debt division. Nick gazed out of the office’s window. While sipping his coffee he thought about the changes that Greece had gone through since he first had set foot in University. Just a few years earlier, Greece was a country of high deficits and high inflation: no wonder that it did not even bother joining the first wave of Eurozone countries in 1998. Since then the incumbent socialist government had pursued a substantial public sector reform, and achieved control over inflation and budget deficit. Even though public deficit remained high (over 100% debt/GDP ratio), Greece had finally made it to join the single currency in 2001. Nick did not know exactly which tasks were awaiting him, but was incredibly thrilled by the opportunity to work for the same people that had made that miracle possible.

Soon later Nick met the head of the debt division, Christopher Sardelis. Christopher introduced himself, and briefed Nick on the current situation. Even though Greece was now part of the single currency it still faced major challenges. The Stability and Growth Pact (SGP) established in 1996 required that member states maintain a debt/GDP ratio of less than 60% and a deficit/GDP ratio of less than 3%. While the high debt/GDP ratio was certainly an issue to be tackled in the long term, Christopher stressed that the deficit/GDP constraint was a more pressing concern. Were countries to breach persistently the 3% target, they would be liable to pay heavy fines to Brussels of up to 0.5% of GDP under the so-called Excessive Deficit Programme (EDP). At the moment Greece was under scrutiny of the European Statistical Office (Eurostat), the regulatory body in charge of determining whether the targets were met. Just a few days earlier, the public debt division had issued a public statement. It acknowledged that its debt was a ‘critical macroeconomic parameter’, and pledged to reduce debt servicing costs. The statement had momentarily eased the pressure of the European Commission, but actions needed to be taken. The obvious solution was to reduce public spending, but this entailed significant political risks to the ruling party, especially after the many sacrifices that the run up to the EU had imposed. It became increasingly clear that the solution could not come from austerity and had to be found

Nick listened attentively, trying to guess what his role in all this would look like. Christopher paused for an instance, and pulled out a folder from his briefcase. He had just met Gary D. Cohn, Goldman Sachs's president, and Antigone Loudiadis, the London-based European head of sales for Goldman Sachs's fixed-income, currencies and commodities unit. The purpose of the meeting had been to review the financial practices followed by Greece to raise capital in international markets. Antigone had immediately understood the complicated circumstances, and optimistically suggested an easy way out. All that Greece had to do was to enter an *off-market cross currency swap* linked to Greece's outstanding yen and dollar debt. The trade would have lowered the interest payments, and therefore significantly eased the pressure exerted by Brussel. All this could have happened without making any adjustment to primary deficit, and therefore was very appealing from a political perspective.

The swap featured interesting benefits, but it seemed to be too good to be true. Christopher had only recently started to look at derivatives as a means to fine tune the structure of public debt. He was acquainted with the mechanics of the main plain vanilla contracts, but by no means an expert of the field. He knew that derivatives allowed better risk management practices, but also could quickly turn into "weapons of mass destruction" if misunderstood and misused. Off-market cross currency swaps had struck him as a complete novelty, and he was not keen on buying GS's pitch before having a thorough understanding of this exotic instrument. This is why he had hired Nick, a talented and smart Finance graduate from one of Europe's best business schools: he needed Nick to produce a briefing about the financial nature of these swaps, and the impact they might have on national accounting.

Nick was puzzled as he went back to his office. The task was interesting and challenging, but was he good enough for it? Asset pricing and derivatives had been his favourite classes at University, and he had devoured books about financial markets. He had learned about plain vanilla interest rate swaps, and also remembered reading about currency swaps. He knew that different parties trade swaps for different reasons. Some use swaps to change the nature of assets and obligations for hedging purposes, others use swaps to speculate on the direction of market variables. He believed that the main players in swap markets were companies and speculators, with market makers bridging their transactions.

What Christopher had told him just did not fit the picture of the swaps world he had in mind. First of all, he had never heard about cross currency swaps, nor about "off-market" clauses. Secondly, while speculation and hedging matched naturally the activities of a trader and a company, it was unclear to him which goal the Greek government should pursue. Betting taxpayer's money certainly did not sound appropriate, but how else could a government derive gains from financial markets? Most importantly, Nick was puzzled by GS's pitch. Swaps are by definition an exchange of cash flows between two parties, a zero sum game. Why would GS sell an all-win contract to the Greek government? Since it was unlikely that GS had all of a sudden turned into a charity, where was the downside hiding? Overwhelmed by all this questions, Nick started searching as much material as possible on Google.

Nick soon found out about cross-currency swaps. These swaps allow two parties to exchange variable cash flows in one currency for fixed cash flows denominated in a different currency. Countries typically obtain funds all round the world, by issuing bonds denominated in different currencies. A country then needs to exchange raised capitals into domestic currency at the time of the issuance, and exchange domestic currency back into foreign

currency each type that it needs to make payments (coupons and principal) to the lender. While the initial conversion to domestic currency entails no risk as it occurs at the onset of the loan, all other payments have an inherent currency risk: if the domestic currency appreciates (depreciates), the value of loan repayments in domestic terms shrinks (rises). A currency swap allows two parties to exchange the principals and the interest rate payments of bonds denominated in different currencies until maturity, when the notionals are swapped again; because they are transacted at spot exchange rates, swaps of this type have zero present value at inception, although the net value (and credit exposure of either counterparty) may subsequently fluctuate. Currency swaps allow parties to eliminate their currency risk exposure. Cross-currency swaps are like currency swaps, except that both legs of the swap need not to be fixed: they allow their holders to hedge against (or speculate on) movements in both the exchange rate and interest rates. For example, an issuer with foreign fixed-rate debt might choose to lock in a favourable exchange rate move. To do this, it could swap a stream of fixed domestic currency payments for a stream of foreign currency ones, referenced to the notional of the debt using the prevailing spot foreign exchange rate, with an exchange of the two notionals at maturity.

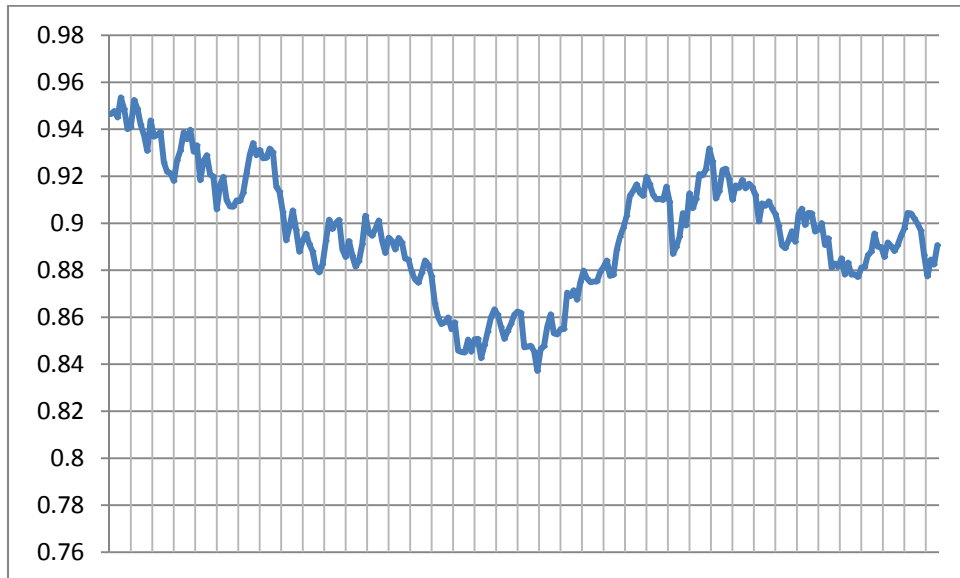
Nick was relieved to find out that cross-currency swaps simply are a currency swap combined with an interest rate swap. He also started seeing the risk management benefits that could have accrued to the Greek government had it decided to enter a cross-currency swap. With respect to a few months earlier, the EURO was stronger and interest rates lower, so it could have been a good opportunity to lock in capital gains made on dollar and yen depreciation, and to secure lower interest rate payments. However, the full picture was still not clear to him. He started looking into the “off-market” aspect of the trade. He found out that the transaction is said to be “off-market” when the spot exchange rate used to re-denominate the notional of the foreign currency debt is different than the one prevailing at the time on the markets: the result is a mismatch between the domestic and foreign currency swap notionals, which needs to be compensated at some stage of the life of the swap. At this point Nick became confused again: why would Greece need to sign an “off-market” swap?

While desperately looking for an answer, Nick figured out that something remarkably similar had happened in Italy a few years earlier. In May 1995 Italy had issued at par a 3 years 3 months JPY200 billion bond with a yearly coupon of 2.3%. At the time of the issuance the JPY/ITL exchange rate was 19.344. By December 1996, the JPY had depreciated to 13.41. Italy took advantage of the situation by entering a cross currency swap with a foreign investment bank. The swap had some very peculiar features. First of all, the JPY/ITL exchange rate used to re-dominate the notional was 19.344, i.e. the exchange rate at the time of the issuance. This was unusual, as swaps are typically entered at spot exchange rates, and very inconvenient to Italy, given the significant depreciation that the JPY had experienced over the previous 19 months. Secondly, the swap variable rate was set to LIBOR minus 1,677 basis points, which was unheard of in swap markets. In practice this meant that the bank counterparty was paying Italy cash advances. Interestingly, the transaction was not recorded (Eurostat’s reporting rules do not comprehensively record transactions involving financial derivatives), and Italy was able to reduce its interest payments and meet Maastricht’s requirements in 1997 and 1998, two critical years for the first round of euro admissions.

It was enough learning for the day. As Nick left the office, he thought about the questions that he had to address in order to fully understand the complexity of the situation. What are the advantages and disadvantages of cross currency swaps? What are the

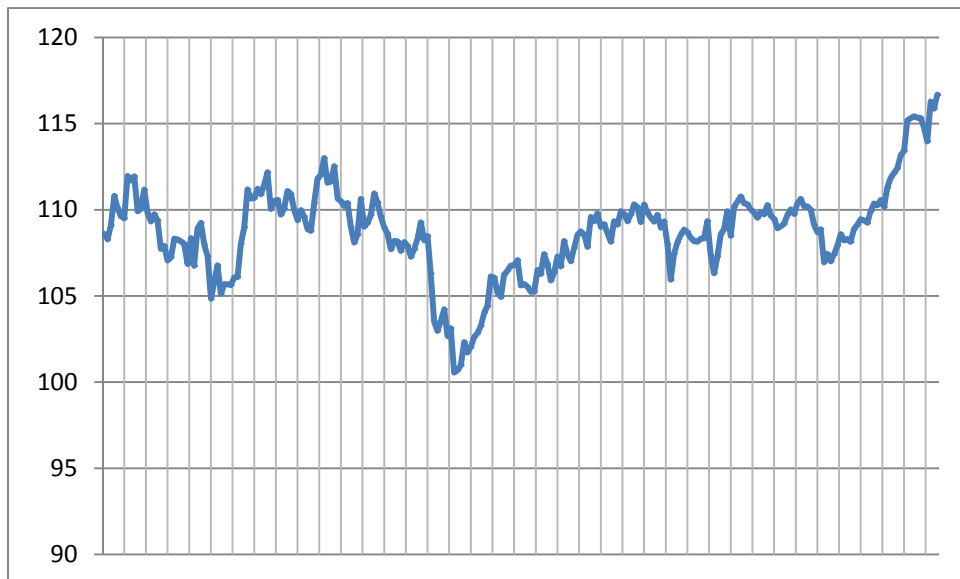
consequences of trading off market swaps? Can a country window-dress its accounts by trading derivatives? How can a country in fact decrease/increase public debt by entering a swap position?

Exhibit 1: USD/EUR from Jan 2001 to Dec 2001



Source: <http://fx.sauder.ubc.ca/data.html>

Exhibit 2: JPY/EUR from Jan 2001 to Dec 2001



Source: <http://fx.sauder.ubc.ca/data.html>

Exhibit 3: Term Structure of Italian Interest Rates in May 1995

Date	ITBT03G	ITBT06G	ITBT12G	ITBRYLD
01/05/1995	11.48	11.69	11.95	13.21
02/05/1995	11.48	11.69	11.95	13.03
03/05/1995	11.48	11.69	11.95	13.008
04/05/1995	11.48	11.69	11.95	12.856
05/05/1995	11.48	11.69	11.95	12.634
08/05/1995	11.48	11.69	11.95	12.556
09/05/1995	11.48	11.69	11.95	12.552
10/05/1995	11.48	11.69	11.95	12.101
11/05/1995	11.48	11.69	11.95	12
12/05/1995	11.48	11.69	11.95	12.119
15/05/1995	10.23	10.39	10.41	11.946
16/05/1995	10.23	10.39	10.41	12.007
17/05/1995	10.23	10.39	10.41	12.08
18/05/1995	10.23	10.39	10.41	12.128
19/05/1995	10.23	10.39	10.41	12.141
22/05/1995	10.23	10.39	10.41	12.154
23/05/1995	10.23	10.39	10.41	12.251
24/05/1995	10.23	10.39	10.41	12.236
25/05/1995	10.23	10.39	10.41	12.109
26/05/1995	10.23	10.39	10.41	12.375
29/05/1995	10.23	10.39	10.41	12.466
30/05/1995	10.23	10.39	10.41	12.369

LEGEND

ITBT03G: ITALY T-BILL AUCT. GROSS 3 MONTH - MIDDLE RATE

ITBT06G: ITALY T-BILL AUCT. GROSS 6 MONTH - MIDDLE RATE

ITBT12G: ITALY T-BILL AUCT. GROSS 12 MONTH - MIDDLE RATE

ITBRYLD: ITALY BENCHMARK BOND 10YR (DS) - RED. YIELD

Source: Datastream

Exhibit 4: Term Structure of Japanese Interest Rates in May 1995

Date	JPTBG1M	JPFNB3M(RY)	JPTRB6M(RY)	JAPGLTB
01/05/1995	1.305	1.35	1.36	3.6
02/05/1995	1.3	1.33	1.35	3.6
03/05/1995	1.3	1.33	1.35	3.6
04/05/1995	1.3	1.33	1.35	3.6
05/05/1995	1.3	1.33	1.35	3.6
08/05/1995	1.275	1.32	1.34	3.51
09/05/1995	1.285	1.3	1.335	3.51
10/05/1995	1.28	1.3	1.345	3.51
11/05/1995	1.29	1.31	1.34	3.51
12/05/1995	1.3	1.31	1.36	3.51
15/05/1995	1.29	1.34	1.365	3.52
16/05/1995	1.3	1.34	1.36	3.52
17/05/1995	1.28	1.33	1.345	3.52
18/05/1995	1.3	1.335	1.345	3.52
19/05/1995	1.29	1.33	1.345	3.52
22/05/1995	1.295	1.33	1.335	3.34
23/05/1995	1.295	1.33	1.33	3.34
24/05/1995	1.295	1.32	1.32	3.34
25/05/1995	1.295	1.29	1.285	3.34
26/05/1995	1.265	1.255	1.235	3.34
29/05/1995	1.24	1.18	1.175	3.13
30/05/1995	1.245	1.12	1.085	3.13

LEGEND

JPTBG1M : JAPAN GENSAKI T BILL 1 MONTH - MIDDLE RATE

JPFNB3M(RY): JAPAN FINANCING BILL 3 MONTH - RED. YIELD

JPTRB6M(RY): JAPAN TREASURY BILLS 6 MONTH - RED. YIELD

JAPGLTB: JAPAN BOND YIELD GOVT.10 YR(ECON) - MIDDLE RATE

Source: Datastream