1. The model

The Treasury’s budget constraint, expressed in pesos, says that the primary deficit plus transfers plus interest payments can be financed by issuing more debt and with receipts from the Central Bank, $RCB_t$:

$$B_{Gr_t} + b_{Gr_t}^* E_t + RCB_t = (D_t + T_s)P_t + B_{Gr_{t-1}} R_{t-1} + b_{Gr_{t-1}}^* R_{t-1}^* E_t$$

where

- $B_{Gr_t}$ is the stock of debt in pesos issued in period $t$
- $b_{Gr_t}^*$ is the stock of dollar-denominated debt
- $E_t$ is the nominal exchange rate
- $D_t$ is the primary deficit, in real terms
- $T_s$ includes all transfers, in real terms; this term represents for example transfers that might occur in times of crisis.
- $R_{t-1}$ is the gross nominal interest rate on debt in pesos issued in $t-1$
- $r_{t-1}^*$ is the gross dollar interest rate on debt in dollars.
- $P_t$ is the price level in pesos.

I exclude debt indexed to inflation from the model because my main data do not report it separately.

The primary deficit, measured in real terms, is defined as

$$D_t = G_t - NOR_t - OR_t$$

where

- $G_t$ is government expenditures
- $NOR_t$ is non-oil revenue
OR$_t$ is oil revenue.
I assume for simplicity that oil revenue comes from oil sales in the international market.\textsuperscript{1} Therefore

$$OR_t = \frac{P_t^*O_tE_t}{P_t}$$

where

- $P_t^*$ is the international price, in dollars, of oil
- $O_t$ is the quantity of oil sold.

The Central Bank budget constraint, expressed in pesos, says that the $RCB_t$ and purchases of government debt can be financed with the interest payments received and with an increase of the monetary base

$$M_t - M_{t-1} + B_{Bi-1}R_{t-1} + b_{Bi-1}^* r_{Bi-1}^* E_t + IR_{t-1}r_{Bi-1}^* E_t = RCB_t + B_{Bi} + b_{Bi}^* E_t + IR_tE_t$$

where

- $M_t$ is the monetary base
- $IR_t$ stands for international reserves
- $r_{Bi-1}^*$ is the gross dollar interest rate on international reserves.

The consolidated government (CG) budget constraint is

$$B_t + M_t + (b_t^* - IR_t)E_t = (D_t + T_t)P_t + B_{Bi-1}R_{t-1} + M_{t-1} + E_t(b_{Bi-1}^* r_{Bi-1}^* - IR_{t-1}r_{Bi-1}^*).$$

This equation takes into account that international reserves are an asset for the CG. International reserves receive a gross interest rate $r_{Bi-1}^*$ different than the one that the Treasury pays on foreign debt $r_{t-1}^*$. The equation says that the primary deficit plus transfers plus interest payments to the public can be financed with more debt and with an increase in the monetary base.

\textsuperscript{1} In reality things are obviously more complex. Historically the taxation of PEMEX has many details.
The notation here is different from the one in the book chapter on Mexico, but the mapping between the two is obvious.

The previous equation can be written in terms of debt-to-GDP ratios. Dividing by nominal GDP, the budget constraint is

\[
\theta_i^N + \theta_i^* + (m_i - m_{i-1}) + m_{i-1} \left(1 - \frac{1}{g_i \pi_i}\right) = d_i + \theta_{i-1}^N \frac{R_{i-1}}{g_{i-1} \pi_{i-1}} + \frac{E_i (b_{i-1}^{*} - IR_{i-1} r_{R_{i-1}}^{*})}{P_i y_i}
\]

where

\(\theta_i^N\) is the nominal debt-to-GDP ratio

\(\theta_i^*\) is foreign debt net of international reserves, relative to GDP

\(m_i\) is the monetary base relative to GDP

\(g_i\) is the growth factor of real GDP

\(\pi_i\) is the growth factor of the GDP deflator

\(d_i\) is the primary deficit plus transfers, relative to GDP.

The first term in parentheses on the left-hand side is the change in the monetary base ratio. The subsequent term is the inflationary tax. The sum of these two terms is seigniorage. On the right-hand side the second term represents gross interest payments on nominal debt. The subsequent term represents gross interest payments on foreign debt net of gross interest received on international reserves. One important comment on notation: the symbol \(\theta_i^*\) represents net foreign debt relative to GDP. I could have used an alternative notation to split the foreign debt-to-GDP ratio into real foreign debt relative to real domestic output, and the real exchange rate.

To separate the role of oil revenue, I substitute the definition of the primary deficit into the previous two equations:

\[
B_i + M_i + (b_i^{*} - IR_i) E_i = (G_i - NOR_i - OR_i + T_i) P_i + B_{i-1} R_{i-1} + M_{i-1} + E_i (b_{i-1}^{*} r_{i-1}^{*} - IR_{i-1} r_{R_{i-1}}^{*}).
\]

and

\[
\theta_i^N + \theta_i^* + (m_i - m_{i-1}) + m_{i-1} \left(1 - \frac{1}{g_i \pi_i}\right) + \omega_i = dEOR_i + \theta_{i-1}^N \frac{R_{i-1}}{g_{i-1} \pi_{i-1}} + \frac{E_i (b_{i-1}^{*} r_{i-1}^{*} - IR_{i-1} r_{R_{i-1}}^{*})}{P_i y_i}
\]

where
\( dEOR_t \) is the primary deficit excluding oil revenue, relative to GDP

\( or_t \) is oil revenue relative to GDP, that is,

\[
or_t = \frac{OR_t}{P_{iy_t}} = \frac{P^*, O, E_t}{P_{iy_t}}.
\]

These equations are straightforward. A higher primary deficit \( dEOR_t \) or higher interest payments can be financed with oil-related revenue. Oil revenue relative to GDP increases when the international oil price is higher. It goes up when the peso loses value, as each dollar sold abroad could then buy more pesos.
2. Construction of the monetary base historical series

For 1960-1992 I used the electronic version of *Estadísticas Históricas*, version 2014, of INEGI (INEGI 2015). For 1993-2016 I used data from the Banco de México. The INEGI series goes from 1960 to 1996. The Banco de México series starts in 1985 because there were changes in the measurement methodology. The samples overlap. They show different levels, with the INEGI series being above Banco de México during the period 1985-1988. Starting in 1989 they have similar values, with a small difference. In 1993 they become identical. I compared the values of seigniorage and of the inflation tax of each series separately. The conclusion is that seigniorage is very similar independently of using one series or another. On the other hand, the inflation tax shows a significant difference. The components of seigniorage, i.e., the change in the demand for real monetary base and the inflation tax, change depending on the series used, at the same time as there is practically no change in its total value.

Source: Author’s calculations with data from Banco de México and INEGI

Figure 2.1 Seigniorage in % of GDP, Computed with Spliced Data, and Computed with Raw Data from Banco de México
Source: Author’s calculations with data from Banco de México and INEGI.

Figure 2.2. Inflationary Tax in % of GDP, Computed with Spliced Data, and Computed with Raw Data from Banco de México
3. Impact of the 1976 Crisis on the real side of the economy

There was a large contraction in 1977 relative to the trend of the economy. In Figure 1 in the book chapter there is no large fall in real GDP per capita in 1977. That may be surprising, as this episode was the beginning of a sequence of balance of payments crises that would hit the economy in 1976, 1982, a big adjustment in 1987, and the 1994 crisis. All these events coincide with the end of presidential terms, except for 1987, which took place a year in advance of the beginning of the term of President Carlos Salinas de Gortari. There were large contractions in the level of real GDP per capita in those years. I first calculated a geometric trend by calculating the average growth rate of real GDP per capita between 1960 and 1975, then computed a series for GDP that grew accordingly. Second, I calculated the logarithmic difference between trend and data. I report the difference in Figure 3. In 1977 real GDP per capita was 4.1% below trend. The large negative deviations in 1962 and 1971 coincide with episodes described in Cárdenas (2015). The large positive deviation in 1968 may be due to government spending as the Olympic Games took place in Mexico City.

Source: Author’s calculations with data from INEGI and World Bank.

Figure 3. Deviation of Real GDP per Capita from 1960-1975 Geometric Trend, in %
4. Monthly behavior of the inflation tax rate

In the book chapter I showed yearly data for the inflation tax revenue. Here I make two changes. First, I use monthly data. Second, I use data that start in 1969. The goal is to have a more precise and broader view of the behavior of the inflation tax. I faced some data limitations, as I was unable to find monthly data on the monetary base before 1985.\(^2\) Therefore, I decided to calculate only the inflation tax rate, the fraction of the purchasing power of real liquid balances that is lost due to inflation. It is \(1 - \frac{1}{\pi_i}\), where \(\pi_i\) is the inflation factor between periods \(t\) and \(t-1\). The data I used is the consumer price index (previously I used the GDP deflator).

\[\text{Source: Author's calculation with data from Banco de México, adjusted for seasonality}\]

\[\text{Figure 4. Inflation Tax Rate, in %}\]

Figure 4 highlights several points. First, the inflation tax rate was low between 1969 and 1973. Second, its average level increased between 1973 and 1979. This period

\(^2\) These data may exist in a physical, not electronic, document from Banco de México.
overlapped with the second half of the presidency of Luis Echeverría (1970-1976). As mentioned before, this was a period of deterioration of the fiscal stance of the public sector that ended with the devaluation of the peso in 1976, the first one in twenty-two years. Third, the inflation tax rate increased rapidly starting in 1980, reaching a local maximum in 1982 at the end of the presidency of José López Portillo, which as mentioned earlier culminated in the 1982 debt crisis.
5. The crucial role of oil revenue for government finances

Banco de México reports the series Ingresos Presupuestales del Sector Público, or Budgetary Revenue of the Public Sector (BRPS).\(^3\) This variable is the sum of oil revenue and non-oil revenue. The latter is in turn the sum of tax collection by the federal government, nontax income from the federal government, and revenue from other institutions and firms part of the federal administration. In Figure 5 I plot the ratio of oil revenue to BRPS.

![Figure 5. Oil Revenue, % of Budgetary Revenue of the Public Sector](image)

Source: Author’s calculations with data from Banco de México and INEGI.

Focusing on 1977-1982, the ratio shows a large increase. Even though I do not present an algebraic decomposition of changes in oil revenue, a simple reason why it increased in this period is the peso devaluation. Even if oil loses value in international markets, the devaluation of the peso may be larger, therefore increasing the ratio of oil revenue relative to other sources of income. Another point that I make is that in the entire

---

\(^3\) To see the precise composition of this variable, see: [http://www.banxico.org.mx/SieInternet/consultarDirectorioInternetAction.do?sector=9&accion=consultarCuadro&idCuadro=CG8&locale=es.](http://www.banxico.org.mx/SieInternet/consultarDirectorioInternetAction.do?sector=9&accion=consultarCuadro&idCuadro=CG8&locale=es)
sample 1977-2016 the average value of this ratio is 31%, which reflects the importance of oil for Mexico’s public finances. This series is very volatile and is correlated with changes in the international oil price.
6. Previous studies of the 1994 crisis

The 1994 crisis led to a large amount of research on its origin. Table Section 6 summarizes some of the papers written in relation to this crisis. The list is not by any means exhaustive. I focused mainly on papers written by top-level ex-policymakers. This is the case of the papers by Gil-Díaz and Carstens (1996), Gil-Díaz (1998), and Serra Puche (2011). Francisco Gil-Díaz and Agustín Carstens worked at the Banco de México. Gil-Díaz was subgobemador of the Banco de México between 1994 and 1997, and secretary of the Treasury during 2000-2006. Carstens was secretary of the Treasury during 2006-2009, and governor of the Banco de México during 2010-2017. Jaime Serra was secretary of Trade during the Salinas administration and was the leading negotiator of NAFTA. He was secretary of the Treasury at the beginning of the 1994-2000 administration of President Ernesto Zedillo. I add to this list one of the first papers evaluating the origin of the crisis, Kehoe (1995). I also include the analysis of Cárdenas (2015).

To summarize the information, in Table 6 the rows represent factors explaining the 1994 crisis. I marked with symbol *** the factors for which there is consensus in the sense that all authors mention the factor as key.

A first result is that there is consensus that two factors were key: the exchange rate regime and political shocks.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange rate regime***</td>
<td>Was a factor</td>
<td>Was a factor</td>
<td>Was a factor</td>
<td>Was a factor</td>
<td>Was a factor</td>
</tr>
<tr>
<td>Debt, short term/indexed to Exchange rate (Tesobonos)</td>
<td>Was a factor</td>
<td>Not a factor</td>
<td>Was a factor</td>
<td>Was a factor</td>
<td>Was a factor</td>
</tr>
<tr>
<td>Political shocks***</td>
<td>Was a factor</td>
<td>Was a factor</td>
<td>Was a factor</td>
<td>Was a factor</td>
<td>Was a factor</td>
</tr>
<tr>
<td>Banking and financial liberalization, and expectations of good performance</td>
<td>Not mentioned</td>
<td>Was a factor</td>
<td>Was a factor</td>
<td>Was a factor</td>
<td>Was a factor</td>
</tr>
<tr>
<td>High US interest rates</td>
<td>Was a factor</td>
<td>Not mentioned</td>
<td>Was a factor</td>
<td>Was a factor</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Reluctance to respond to crisis</td>
<td>Was a factor</td>
<td>Not mentioned</td>
<td>Not mentioned</td>
<td>Not mentioned</td>
<td>Was a factor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The symbol *** means consensus across papers that the factor was key.  
Source: Papers cited.

Table Section 6. Papers on Origin of 1994 Crisis, Main Factors

Even though there is consensus that the exchange rate regime was key, the reasons behind its importance vary across authors. As mentioned earlier, the exchange rate regime was a predetermined band in which the peso per dollar exchange rate was allowed to fluctuate. The upper bound of the band grew at a known rate. Kehoe (1995), Serra Puche (2011), and Cárdenas (2015) argue that policymakers put a lot of weight on using the exchange rate as a nominal anchor to reduce inflation. A devaluation of the
peso, say in mid-1994, would have caused not only higher inflation but also a loss of credibility. Therefore, policymakers were reluctant to devalue the peso in the months after the murder of Luis Donaldo Colosio. Gil-Diaz and Carstens (1996) put emphasis on the fact that there had been a transformation of international financial markets since the beginning of the 1990s, as capital flows grew and moved rapidly in and out of markets. This transformation made economies more vulnerable to changes in international portfolios. Additionally, they mention that even developed countries were not exempt from speculative attacks on currencies, as shown by the 1992 events in Europe in which many countries had to devalue.

There is also consensus that political shocks were crucial. The most important one was the murder of presidential candidate Luis Donaldo Colosio. Figure 6 shows the path of international reserves of the Central Bank during 1994. At the beginning of 1994 the Banco de México had a historically large amount of reserves, above $25 billion. Today it does not sound like a large quantity, but it was then. After the murder of Colosio in late March, reserves fell dramatically to approximately $17 billion in April. Then reserves stabilized throughout most of the year. In the final months of 1994 political events may have also had an impact. Gil-Diaz and Carstens (1996) mention reports on renewed activity by the Zapatista movement in early December, later found to be exaggerated, which had a negative effect on the peso.

Let me discuss briefly the contribution of other factors to the 1994 crisis. Figure 6 shows the growth of a particular kind of debt, the Tesobonos, which had a face value in dollars but were payable in pesos according to the current exchange rate. Kehoe (1995), Serra Puche (2011), and Cárdenas (2015) stress that this growth made the economy more vulnerable. Investors realized that a devaluation of the peso would instantly multiply the burden of this kind of debt, assuming the government paid. Another possibility was some kind of default, as Kehoe (1995) and Serra Puche (2011) mention. From my point of view, the benefit of issuing Tesobonos was to offer investors an asset protected against devaluations, thus guaranteeing the flow of funds to the government. The cost was precisely that in the event of devaluation, investors would worry about payment, thus exchanging pesos for dollars and reallocating funds abroad. Gil-Díaz (1998) points to the issuance of Tesobonos as one source of the growth in the indebtedness of the Mexican economy during 1994 that contributed to the crisis.
Serra Puche (2011) includes an atmosphere of financial euphoria, a disconnect between expectations and the state of the economy, as a contributor to this crisis. Gil-Díaz (1998) and Cárdenas (2015) emphasize the banking and financial liberalization of the early 1990s in Mexico as a crucial factor generating the 1994 events. They both argue that the privatization of banks that took place in 1991 was flawed. The opening of the economy to trade in goods and assets created a large inflow of foreign capital that was channeled through the banking sector to households and firms. The growth in lending was massive, with the bank credit-to-GDP ratio reaching levels not seen since the 1970s. Kehoe and Meza (2011) report that ratio. Regulators could not keep up with the growth in loans and were unable to monitor the risk features of the loan portfolios. Notice that there was a currency mismatch, as Mexican banks had liabilities in dollars and assets in pesos. This made banks very vulnerable to a devaluation.

Kehoe (1995), Gil-Díaz (1998), and Serra Puche (2011) point to a simple, but in my opinion, powerful force that contributed to the crisis: the increase in interest rates in the US during 1994. The US three-month Treasury bill rate was basically flat during 1993. It grew almost continuously during 1994. The interest rate in December 1994 was 250 basis points above its December 1993 level. Obviously the fact that interest rates increased in the US represented a larger opportunity cost of investing in Mexico. The opportunity cost became higher during 1994, putting pressure on the peso.

The final factor was reluctance to respond to the ongoing worsening of the financial situation. Kehoe (1995), Serra Puche (2011), and Cárdenas (2015) argue that the exchange rate regime could have been adjusted at a time when the Banco de México had a relatively large amount of reserves. This hypothetical adjustment would have taken place in the months that followed the death of Luis Donaldo Colosio. As mentioned earlier, reserves had stabilized by April 1994. In fact this point is closely related to the previous discussion on the contribution of the fixed exchange rate regime. One of the government’s most important goals was the reduction of inflation. The Salinas administration had been successful achieving an inflation of 10% per year at the beginning of 1994. The government had set the goal of low inflation as part of the Pactos mentioned in the book chapter. It would have lost credibility facing powerful union and business leaders. Therefore the government did not devalue in mid-1994
because the subsequent inflation would have undermined its bargaining power, and the goal of controlling inflation would have been postponed.


Figure 6. International Reserves and Government Bonds, in Billions of US Dollars

Toward the end of December 1994 Mexico abandoned its exchange rate regime and let the peso float. The financial situation of the government was dire. At the same time, it is important to say that the Mexican government did not default. A factor in how events developed during 1995 was the financial aid program, a credit line, led by the US and the International Monetary Fund (IMF). Mexico received $50 billion. Out of that amount, $20 billion came from the US under the presidency of Bill Clinton. The remaining funds came from the IMF, the World Bank, the Bank for International Settlements, and other institutions.
7. Facts on debt dynamics, and a comparison of alternative measures of debt

I highlight three facts on debt dynamics from the main analysis. There is a decline in the foreign debt ratio since the mid-1980s. There is a fall in the domestic debt ratio until 1994, and then the trend changes. Third, after many years of reductions, total debt starts to increase in 2008.

One goal of this section is to verify if these dynamics are similar when looking at alternative measures of debt. Both the Banco de México and the SHCP calculate statistics on debt issued by a broad definition of the government. The SHCP calculates the *Saldo Histórico de los Requerimientos Financieros del Sector Público* (SHRFSP). This measurement includes the federal government, plus several firms and institutions that are part of the public sector. Banco de México calculates two statistics. One is the *Deuda Económica Amplia* (DEA), which is similar to the SHRFSP in the sense that it takes into account a large definition of the government. The second is the *Deuda Neta Consolidada con el Banco de México* (DNCBM) which is the one I have been using as raw data in the book chapter.

A difference in coverage between the SHRFSP and the DEA is that the second one excludes *Organismos y empresas del Sector Público*. This is a set of heterogeneous institutions. One example is the social security institute, IMSS, which I mentioned in Table 1 in the book chapter. Another example is Mexico’s postal service (*Servicio Postal Mexicano*), which would be inside group B.2 in Table 1 in the chapter.

A second difference in coverage is that the SHRFSP includes the following set of items: Pidiregas, FARAC (FONADIN), *Programa de Apoyo a Deudores*, and IPAB. FARAC refers to a rescue program of privately built highways. *Programa de Apoyo a Deudores* and IPAB refer to the rescue programs of debtors and banks after the 1994 crisis.

The DNCBM is the same as the DEA, plus it takes into account assets and liabilities of the Central Bank.

---

4 I have already mentioned Pidiregas. PEMEX and CFE used this instrument, in which the private sector carried out an infrastructure project and would be paid to after its completion. Liabilities on the side of PEMEX or CFE were registered only after completion of the project.
Table Section 7 below gives more detail on coverage for each measure of debt. The SHRFSP includes more components of government compared to the DEA and the DNCBM. That is one advantage for the analysis of the fiscal and debt situation of the government.

I worked with the DNCBM in the main text for two reasons. The first one is that such data series starts in 1980; whereas, the SHRFSP starts later, in the 1990s. The Banco de México provides two time series for the SHRFSP. One is a yearly ratio of SHRFSP to GDP starting in 1994. Another is a quarterly time series of the level of the SHRFSP starting in the last quarter of 2000. The second reason I choose the DNCBM is that it consolidates the fiscal branch of the government with the Central Bank, as in the theoretical model.

There are other dimensions in which the statistics compiled by the SHCP and the Banco de México differ. One is whether debt is valued at face or market value. Each kind of measurement provides different information. Debt at face value is an indicator of the burden of the debt, as it is the amount that the government promised to pay. Debt at market value takes into account the willingness of financial markets to buy government debt. For example, if markets have doubts about repayment, the price of debt will go down and this will reduce the value of debt.

One advantage of the statistics of the Banco de México is that they include long-term debt. I could not find more detail on this point. But it is of course desirable to include debt of all maturities when analyzing the indebtedness position of the government.
Table Section 7. Comparison of Measures of Net Debt of Broad Definition of Government

Figure 7.1 shows the evolution of different measures of debt split into domestic and foreign. “Domestic debt” and “Foreign debt” are the time series shown in Figure 4 in the book chapter. Recall that those series consolidate the public sector with the Banco de México. “DEA domestic” and “DEA foreign” are calculated by the Banco de México. “SHRFSP domestic” and “SHRFSP foreign” are series calculated by the SHCP, and represent a different measure of debt.

The first fact listed at the beginning of this section does not hold, given what happens towards the end of the sample. Compared to the benchmark series, both foreign DEA and foreign SHRFSP show an upward trend starting in 2010.
The second fact holds, as the three measures of domestic debt show an increase starting in 1995.

![Graph showing measures of foreign and domestic debt 1977-2016, % of GDP.](image)

Source: Author’s calculations with data from Banco de México and INEGI.

Figure 7.1. Measures of Foreign and Domestic Debt 1977-2016, % of GDP

Figure 7.2 shows the evolution of total debt. “Total debt” is the series I used in the book chapter.

The third fact listed also holds. The three debt series show persistent increases starting in 2008.

An important observation is that the level of the SHRFSP is about 10 percentage points higher between 1995 and 2007, compared to the other series. Table Section 7 shows that a source of this higher level is the fact that the SHRFSP includes additional items compared to the Banco de México data: the first one is *Organismos y empresas del Sector Público*, and the second one is the *Pasivos Adicionales*, or “Additional Liabilities” coming from Pidiregas, FARAC (FONADIN), *Programa de Apoyo a*
Deudores, and IPAB. Obviously, it would be interesting to get deeper into the data and find out which one of these items produces the difference in levels, as it is sizable. It is very likely that the main source of the difference is the expenditure on the rescue programs of debtors and banks after the 1994 crisis.

Source: Author’s calculations with data from Banco de México and INEGI.

Figure 7.2 Measures of Total Debt 1977-2016, % of GDP
8. The fiscal reform of 2014

The set of changes included:
1. A limit on certain tax deductions that firms can make when paying the corporate income tax.
2. Elimination of the fiscal regime that allowed firms belonging to a business group to file taxes jointly. With the reform, each firm files its taxes separately.
3. A tax on capital gains was added to personal income taxation.
4. A limit on tax deductions allowed when filing the personal income tax.
5. An increase in marginal tax rates for high-income earners.
6. The creation of a tax regime designed to attract workers/entrepreneurs in the informal sector. They were offered tax discounts and incentives such as access to the financial system and credit.
7. The creation of taxes on carbon emissions, and on sweetened beverages and high calorie-content food.
8. In Mexico states collect a tax based on the value of real estate. States were given an incentive to put effort into collecting this tax by keeping a share, the rest going to the federal government. For more detail see Gobierno de la República (undated).
9. Additional references cited in the Appendix, not cited in the book chapter

